

STUDIES IN THE LAURACEAE, IV
PRELIMINARY STUDY OF THE PAPUASIAN SPECIES
COLLECTED BY THE ARCHBOLD EXPEDITIONS

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THIS study includes the Lauraceae from Papuasias in the larger sense. The species below are based principally on the three Brass collections from British and Netherlands New Guinea. Included also are the Brass and Kajewski Solomon Islands specimens and those of Kajewski from the New Hebrides. Some of the Waterhouse plants from Papuasias as well as a few numbers of the Carr collection from New Guinea are cited. It is by no means an exhaustive study, but complete only in so far as the limited amount of material at hand has allowed. Of the large number of lauraceous species described by Teschner in 1923, based on the collections of Schlechter and of Ledermann from Northeastern New Guinea, there were only two types available for study.

The following abbreviations are used indicating in which herbaria the specimens cited are to be found: AA = Arnold Arboretum, Harvard University; G = Gray Herbarium, Harvard University; NY = New York Botanical Garden Herbarium. Thanks are due to the Curators of these herbaria for generous loan of material for study.

Cinnamomum Blume

Cinnamomum solomonense, spec. nov.

Arbor ad 15 m. alta, ramulis glabris striatis rubescentibus. Folia opposita vel subopposita, elliptica, 12–20 cm. longa, 4.5–8 cm. lata, coriacea, acuminata vel attenuato-acuminata, basi anguste cuneata, glabra, triplinervia, nervis utrinque prominentibus quam lamina supra pallidioribus subtus obscurioribus, nervis lateralibus circa 0.5–1 cm. supra basin laminae divergentibus, ad apicem evanescentibus, venis transversis supra inconspicuis subtus conspicuis, petiolis 15–17 mm. longis rubescentibus glabris. Inflorescentia subterminalis, cymoso-paniculata, plus minusve laxa, quam folia brevior, ad 10 cm. longa, ramulis rubescentibus glabrescentibus. Flores ultimi 2–3, dense sericeo-canescenti-pilosi, 3 mm. longi, perianthii lobis pallide viridibus fide coll., pedicellis dense canescenti-pilosis, 3 cm. longis tenuibus. Fructus immaturus, in sicco rubescente-brunneus, glaber, ovoideus, apiculatus, ad 15 mm. longus, 12 mm. latus, calyce crasso ruguloso glabro 10–12 mm. longo undulato suffultus.

SOLOMON ISLANDS: Bougainville: Buin, Kugumaru, *Kajewski 1815* (TYPE, AA), alt. 150 m., common in rain-forest, June 6, 1930 (medium-sized tree up to 15 m. high, flower small, petals light green; fruit immature); Koniguru, *Kajewski 2137* (AA), alt. 900 m., common in rain-forest, Aug. 23, 1930 (small tree up to 8 m. high; fruits green with light minute spots on surface; seeds fleshy, purple in colour, very much like an *Eugenia*; length of fruit including calyx 2 cm., diameter at widest place 1.4 cm.)

(AA); Siwa, *Waterhouse 126* (Yale ser. no. 22837) (AA), Nov. 1932 (small native spice tree with scented bark; leaf glossy; common name: "Enu").

The species differs vegetatively from *C. Massoia* (Becc.) Schewe, its closest relative, if we admit the latter into the genus *Cinnamomum*. Judging from the scant descriptions of literature, differences are apparent in the elliptic or lanceolate leaves (those of *C. Massoia* having a definite tendency towards an oblanceolate condition) and the unmistakable triplinerviate condition (that of *C. Massoia* being according to Schewe¹ semi-trinerviate). *Cinnamomum xanthoneurum* Bl. is in the same group with the two latter-mentioned species, but may be distinguished readily by the canescent-sericeous underleaf surface and the fact that the lateral nerves begin to branch shortly after the middle of the leaf, whereas in *C. Massoia* and *C. solomonense* they remain unbranched until they approach the apex of the leaf.

Kajewski 2137 has been included under this species even though the leaves of that number are on the whole longer than those of the type; the flowers of the former are in a younger stage and the bark of the branchlets gives forth a faint sweetish odor, whereas that of the type is odorless.

***Cinnamomum Clemensii*, spec. nov.**

Arbor parva, ramulis vetustioribus glabris, junioribus sparse pubescentibus, striatis rubescentibus. Folia opposita late elliptica, 10–13 cm. longa, 4–6.5 cm. lata, subcoriacea, acuminata, glabra, juventute haud pubescentia, triplinervia, nervis subtus prominentibus, juventute pubescentibus, mox subglabrescentibus, nervis lateralibus ad basin vel circa 4 mm. supra basin laminae divergentibus, venis transversis subparallelis supra haud, subtus conspicuis, petiolis ad 10 mm. longis rubescentibus, pubescentibus mox glabris. Inflorescentia axillaris cymoso-paniculata, quam folia brevior plus minusve pauciflora, ad 10 cm. longa, flavo-brunneo-pubescentia (in sicco rufescenti-pubescentia) pedunculis tenuibus rubescentibus. Flores 2–3 dense pubescentes, $\pm$ 3 mm. longi, subsessiles (?). Fructus ignotus.

NORTHEASTERN NEW GUINEA: Morobe District, Yunzaing, *Clemens 3867* (TYPE, AA), alt. 1370 m., forest hills, August 15, 1936 (small tree, flower buds dull brown-yellowish; leaf pale under surface).

The species is outstanding because of the slender inflorescence, few-flowered, long-peduncled for the most part, and with dense brownish red pubescence. The latter is unusual, for in the majority of herbarium specimens of other species the pubescence appears yellowish, greyish or even fuscous. The affinity of the species, not close at best, seems to be with not one but several species from Malaysia.

***Cinnamomum Archboldianum*, spec. nov.**

Arbor ad 6 m. alta, ramulis glabris striatis griseis, ultimis rubescentibus. Folia opposita vel subopposita, lanceolata ellipticave, variabilia, 7–12 cm. longa, 2.5–4 cm. lata, subcoriacea, attenuate subacuminata subcaudatave, falcata, glabra, juventute subtus pallide glaucescentia, triplinervia, nervis prominentibus lateralibus circa 3–5 mm. supra basin laminae divergentibus ad apicem evanescentibus, reticulata, petiolis ad 1 cm. longis rubescentibus

¹O. Schewe in Engl. Bot. Jahrb. **58**: 494. 1923.

glabris. Inflorescentia (racemosa?) quam folia brevior, ad 5 cm. longa. Flores ignoti. Fructus in sicco rubescenti-brunneus, glaber, ovoideus, apiculatus, 10–12 mm. longus, 8–9 mm. latus, calyce gracili crasso dilatato sparse pubescente minusquam 1 mm. longo 4 mm. lato suffultus.

NETHERLANDS NEW GUINEA: Hollandia, *Brass* 8953 (TYPE, AA), alt. 30 m., open second growth on steep dry slopes, July 7, 1938 (tree 5–6 m. high; leaves very prominently 3-nerved).

From description, this species seems most closely related to *C. Englerianum* Schewe. However, it differs in not having reddish branchlets throughout; also there seems to be no trace of the flavo-sericeous pubescence characteristic of the inflorescence of *C. Englerianum*; finally, the conspicuous transverse venation occurring at a definite angle of 60 degrees in the latter species is obscure in *C. Archboldianum*. The leaf-size of *C. Englerianum* is not given by Schewe, and so it is impossible to compare the two on that point.

Superficially *C. Archboldianum* has the appearance of *C. Burmanni* (Nees) Blume from eastern Asia and Malaya, in the leaf shape and variation in size of leaf. The infructescence is similar, as is the fruit, the latter differing only in the somewhat undulate margin of the shallow cupule, as opposed to the definitely partite cupule of *C. Burmanni*. The bark of the branchlets of *C. Burmanni* is reddish brown rather than greyish as in *C. Archboldianum*.

Phoebe Nees

Phoebe Clemensii, spec. nov.

Arbor magna (30 m. alta), diam. 30–60 cm., ramulis juventute striatis dense ferrugineo-tomentosis demum crassis glabris, foliorum delapsorum cicatricibus conspicuis magnis et lenticellis conspicuis notati griseis vel rubescentibus. Folia ad apicem ramulorum plus minusve fasciculata vel subverticillata, obovata, 15–17(–24) cm. longa, 7–9 cm. lata, subcoriacea, (acuminate vel breve acuminata) ad basin attenuata, basi subrotundata vel subauriculata, raro obtusa, supra costa pubescente excepta glabra, leviter ferrugineo-pubescentia, penninervia, nervis 12(–15), satis arcuatis supra impressis subtus elevatis conspicuis, reticulata, petiolis 5–10 mm. longis pubescentibus. Inflorescentia axillaris ex foliorum ultimorum axillis, vel subterminalis, cymoso-paniculata, pauciflora, ad 22 cm. longa, longepedunculata, pedunculis $\pm$ 13 cm. longis, breviter tomentosa. Flores ultimi 2–3, dense tomentosi, 5–6 mm. longi, in sicco pallide brunnescentes, perianthii lobis utrinque pubescentibus, pedicellis dense tomentosis $\pm$ 2 mm. longis. Infructescencia crassa, glabrescens. Fructus viridis fide coll., glaucus, glaber, ovoideus, apice obtusus, minute apiculatus, 1.5×1 cm., calyce ligneo crasso persistente subtentus, pedicello ad 2.5 cm. lato incrassato.

NORTHEASTERN NEW GUINEA: Morobe District, Sattelberg, *Clemens* 1072 (TYPE, fl., AA), alt. 1000–1200 m., Dec. 3, 1935; *Clemens* 615 (AA), alt. 900 m., forest hills, Oct. 24, 1935 ("big tree," diameter breast high 30–60 cm.; flower dull yellow). BRITISH NEW GUINEA: Central Division, Dieni, Ononge Road, *Brass* 3829 (fruit, AA), alt. 500 m., rain-forest, April 21, 1933 (tree about 30 m. tall, with grey lenticellate bark and tough yellowish wood; leaves clustered at branch ends; peduncles and pedicels red; fruit smooth, green, covered with glaucous bloom).

The parts of the description in parentheses were taken from the Brass number and not from the type. *Clemens 615* is a much smaller-leaved specimen, but the typical leaf-base, the inflorescence with its pale tan tomentose pubescence, and the scarred branches, bearing leaves at their tips, place it without doubt in the above species. *Phoebe Clemensii* is very close to *P. novo-guinensis* Teschn. and to *P. Forbesii* Gamble. In fact, all three are very closely related. Having no specimens of either one, it is necessary to rely on the descriptions. The new species is separated at once from both the others by the abruptly acuminate leaves, roundish to subauriculate at the base, and by the inflorescence being 13–20 cm. long. The leaves of both *P. Forbesii* and *P. novo-guinensis* are more or less acuminate and are acute, cuneate, or attenuate at the base, and the inflorescences are 10–15 cm. long.

The nearest relative outside of New Guinea, as far as can be ascertained from literature, is *Phoebe macrophylla* Bl., from Malaysia, which again has larger leaves with petioles usually much longer (1–2.5 cm.).

Nothaphoebe Blume

Nothaphoebe Archboldiana, spec. nov.

Arbor ad 30 m. alta, ramulis glabris teretibus irregulariter sulcatis griseis, junioribus paullo angulatis striatis rubescentibus vel olivaceis. Folia subverticillata, obovata, 9–18 cm. longa, 2.5–7 cm. lata, coriacea, juniora chartacea, minute pellucido-punctata, obtusa vel obtuse acuminata, basi attenuato-cuneata, penninervia, nervis 8–10 utrinque sub conspicuis, reticulata, subtus reticulo quam supra conspicuiore, petiolis crassis sulcatis ad 1 cm. longis griseis glabris, junioribus gracilibus rubescentibus. Inflorescentia axillaris, cymoso-paniculata, laxa, ad 7 cm. longa, glabra, 3-flora, pedunculis ad 3.5 cm. longis. Flores 2–2.5 mm. longi, albi, margine ciliolato excepto glabri, pedicellis $\pm$ 1 cm. longis gracilibus tubiformibus glabris post anthesin purpurascentibus fide coll. Fructus ruber, fide coll., in sicco nigrescens, glaber, ellipsoideus, 4.2×2.2 cm., pedicello crasso ad 2 cm. longo apice 4 mm. crasso griseo.

BRITISH NEW GUINEA: Lower Fly River, Sturt Island, *Brass 8134* (TYPE, AA), abundant and more or less gregarious on frequently inundated flood plains, Oct. 1936 (tree 30 m. high, developing a complicated maze of slender aërial roots arched over the base silt, the bark thick, grey, lenticellate, the wood pale yellow; flowers white, the pedicels purple after flowering; fruit smooth, red, 4.2 cm. long $\times$ 2.2 cm. diameter; only meagre material available); Wame River, Purari Delta, *Brass 1081* (AA), river bank, rain-forest, Feb. 28, 1926 (shapely tree, 30 ft.; fruit elongated, white, pink-tinged). NETHERLANDS NEW GUINEA: 4 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh 13118* (AA), alt. 850 m., rare in primary rain-forest of the flat plain, March 7, 1939 (tree 31 m. high, the diameter 73 cm., the crown not widespreading, the bark 14 mm. thick, light brown, fairly smooth, the sap-wood orange, the heart-wood brown-yellow; fruit rose). NORTHEASTERN NEW GUINEA: *Schlechter 18322* (AA), Oct. 3, 1908 (in den Galleria Wäldern am Renija).

This is the first species of *Nothaphoebe* to have been noted from Papuasias. The profusion of obovate subverticillate leaves, the characteristic perianth with the outer cycle of lobes much smaller than the inner, and the typical fruit seated on an enlarged pedicel from which the floral parts have disappeared stamp the species unmistakably as *Nothaphoebe*. The collections

available at present are all placed in one species, despite a few differences. *Brass 1081* from British New Guinea, for example, varies from the others in height.

Actinodaphne Nees

Actinodaphne tomentosa Teschner in Engl. Bot. Jahrb. **58**: 384. 1923.

Inflorescentia (*Clemens 3983*) in toto dense pallide ferrugineo-sericea, umbellulis subsessilibus 1–3 (?). Flores, pedicellis 3–4 mm. longis, perianthii lobis 4, ligulatis, ciliatis, $\pm$ 3 mm. longis, extus longe-pubescentibus, intus glabris, ovario 2–3 mm. longo, obovoideo, glabro. Fructus brunneo-viridescens, glaber globosus, apiculatus, 7–8 mm. diametro, calyce incrassato, 5–6 mm. lato distenso, pubescente, suffultus, pedicello 5–6 mm. longo, incrassato. (*Clemens 4613, 5144*).

NORTHEASTERN NEW GUINEA: Kaiserin Augusta Fluss, Schraderberg, *Ledermann 11895* (TYPE Berlin, not seen), alt. 2070 m., June 1, 1914; Wälder am Goridjoa, *Schlechter 19818* (ISOSYNTYPE, AA), alt. 1200 m., June 13, 1909; Morobe District, Yunzaing, *Clemens 3983* (fruit, AA), alt. 1370 m., forest hills, Aug. 25, 1936 (small plant, polelike; fruit green); same locality, *Clemens 3749* (AA), alt. 1675 m., forest mountain, July 31, 1936 (small tree 5–7.7 cm. diam. breast high; flower-buds khaki-yellow; leaf pale bluish beneath); Ogeramnang, *Clemens 4613* (fr. AA), alt. 1765 m., forest hills, Dec. 15, 1936 (small tree, diam. breast high 2.5–5 m.; fruit green); same locality, *Clemens 5144* (fruit, AA), alt. 1705 m., forest above rivulet, Jan. 26, 1937 (small-medium tree, diam. breast high 12.7 cm., fruit green).

Clemens 3983 has only ♀ flowers, which are too mature for complete description of staminodia and ovary, but very probably the plant may be found to belong to *Neolitsea*. I have examined in detail *Schlechter 19818* and find no flowers with 6 perianth lobes, as described by Teschner for the species. However, *Ledermann 4895* may have been the sheet chosen by Teschner as the type and he may have drawn up his description from that sheet. The majority of Teschner's new species of *Actinodaphne* from New Guinea are described by him as having a six-lobed perianth. Except for the above species I have seen no material of Teschner's species. Hence, I cannot definitely conclude that the latter belong in *Neolitsea* rather than *Actinodaphne*. The descriptions, however, would indicate that such is the case.

Actinodaphne Brassii, spec. nov.

Arbor parva, ramosissima, ramulis glabrescentibus, ferrugineo-pubescentibus evanidis, nodis exceptis striatis, brunnescentibus viride-brunneisve. Folia verticillata in nodo quove 5–6, plerumque lanceolata, 13–17 cm. longa, 2.5–3 (raro 4) cm. lata, juventute chartacea, maturitate subcoriacea, ad apicem attenuata, rare attenuate acuminata, pallida, maturitate margine undulata, supra in sicco pallida, subtus griseo-glaucula, supra glabra subtus glabra vel leviter glabrescentia, penninervia, costa utrinque conspicua, subtus glabrescente, nervis 10–15 inconspicuis, minute reticulata, petiolis juventute ferrugineo-pubescentibus, mox glabrescentibus. Inflorescentia ∞ fasciculata umbellulata vulgo internodalis, ♂ in toto pallide brunneo-sericea, 3–5 umbellulis pedunculatis, pedunculis 10–14 cm. longis, gracilibus pubescentibus, umbellulis 3–5-floris. Flores virides fide coll., $\pm$ 4 mm. longi pedicellis 2–5 mm. longis, perianthii lobis 5, ovatis, interioribus ciliatis punctatis. Inflorescentia ♀ ignota. Infructescentia pubescens mox glab-

rescens, umbellulorum pedunculis 6 mm. vel brevioribus longis, pedicellis $\pm$ 5 mm. longis. Fructus viride-flavescens, pallide maculatus fide coll., glaber, compresse globularis, apiculatus, 7–9 mm. longus, 9–10 mm. latus, calyce ruguloso pubescente, $\pm$ 2 mm. longo, suffultus.

SOLOMON ISLANDS: *Y s a b e l*: Tasia, *Brass* 3290 (TYPE, AA), common on rocky foreshores, Dec. 6, 1932 (small much-branched tree; young foliage flaccid and drooping, yellow-green; upper side of leaves dull green, the lower side grey; flower green; common name: "Tula"). *F l o r i d a* (*N' g e l a*): Northern end of island, *Brass* 3505 (AA), plentiful in coastal rain-forests, Jan. 25, 1933 (small tree with thin brown bark and pale yellowish wood; leaves undulate, the under side grey; fruit smooth, greenish yellow, with pale mottlings).

A species characteristic in the group because of the lanceolate leaves that have a greyish undersurface. It is very close to *A. solomonensis* Allen, but differs in leaf characters and in the presence of longer peduncles of the umbellules.

***Actinodaphne Archboldiana*, spec. nov.**

Arbor, ramulis fusco-glabrescentibus hinc inde glabratis, striatis, brunneis. Folia verticillata, in nodo quove 5–6, elliptica elliptico-lanceolatave, 14–20 cm. longa, 3.5–7 cm. lata, subcoriacea, subacuminata, longe acuta vel acuta, in sicco nigrescentia, supra glabra nitida, subtus sparse pubescentia mox glabrescentia, glauca fide coll., penninervia, nervis 8–10, utrinque conspicuis prominentibus, subtus parce pubescentibus, ad marginem arcuatis evanidis, venis transversis utrinque inconspicuis, petiolis ad 1.5 cm. longis, fuscentibus, pubescentibus mox glabrescentibus. Inflorescentia ∞ fasciculata umbellulata, vulgo internodalis, $\varnothing$ in toto dense cano-sericea, 3–5 umbellulis pedunculatis, pedunculis ad 6 mm. longis, gracilibus, pubescentibus, umbellulis 3–5-floris. Flores ad 3 mm. longi, pedicellis 1–4 mm. longis, perianthii lobis 6, ovatis ciliatis, extus pubescentibus, intus glabris. Inflorescentia δ et fructus ignoti.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7493 (TYPE, AA), common sub-canopy tree of poorer type of rain-forest, Aug. 1936 (underside of leaves glaucous).

According to Teschner's key, the new species falls into the verticillate-leaved group, in the bracket "*Petoli tomentosi*," with one other species, *A. tomentosa* Teschner. Although the pubescence on the petioles of the leaves of *A. Archboldiana* is sparse, it is evident that the petioles have become glabrescent with age. *Actinodaphne Archboldiana* is easily separated, however, by the absence of tomentum on the branchlets and the under surface of the leaves. The only other described verticillate-leaved species from New Guinea are *A. nitida* and *A. latifolia*, both described by Teschner, with glabrous petioles. *Neolitsea Vidalii* Merr. from the Philippines, based on *Litsea verticillata* Vidal, is probably an *Actinodaphne* and very closely related to *A. Archboldiana*.

***Actinodaphne solomonensis*, spec. nov.**

Arbor parva ad 15 m. alta, ramulis glabris striatis, viride-brunneis, maculatis. Folia verticillata in nodo quove 5–6, elliptica elliptico-lanceolatave, 14–20 cm. longa, 4–6 cm. lata, subcoriacea, acuminata, longe acuta vel acuta, supra glabra pallida, subtus nervis sparse pubescentibus exceptis

glabra fide coll. cano-argentea, penninervia, nervis 7–10 utrinque conspicuis prominentibus, subtus parce pubescentibus ad marginem arcuatis evanidis, venis transversis utrinque inconspicuis, petiolis 13–20 mm. longis, fuscentibus, pubescentibus mox glabrescentibus. Inflorescentia ∞ fasciculata umbellulata, vulgo internodalis, δ in toto brunneo-sericea, (3?–)5 umbellulis pedunculatis, pedunculis 4–9 mm. longis, gracilibus pubescentibus umbellulis 3–5-floris. Flores virides fide coll., pedicellis $\pm$ 5 mm. longis, perianthii lobis 5, ovatis, interioribus ciliatis, quam exterioribus brevioribus, extus pubescentibus punctatis. Inflorescentia φ et fructus ignoti.

SOLOMON ISLANDS: Bougainville: Buin, Kugumaru, *Kajewski 1889* (TYPE, AA), alt. 150 m., rain-forest, June 30, 1930 (small tree up to 15 m. high; leaves white, silvery underneath; buds green, with green sepals, petals, and stamens; wood used for building native houses; common name: "Nagi-a").

This species differs from *A. Archboldiana* in having glabrous green-brown branchlets. Its leaves are glabrous except for the nerves on the lower surface, which are glabrescent to glabrous, and white silvery beneath, not blackening as in *A. Archboldiana*. The herbarium specimens show only a suspicion of glaucosity beneath. On the whole, the petioles of *A. solomonensis* are longer. The δ flowers of *A. solomonensis* are larger than the φ flowers of *A. Archboldiana*; the pubescence of the latter is more brown than whitish.

Neolitsea Merrill

Neolitsea Archboldiana, spec. nov.

Arbor parva, 4–5 m. alta, ramulis brunneo-rubrescentibus, glabris. Folia subverticillata, elliptico-lanceolata, 12–15 cm. longa, 3.5–5 cm. lata, chartacea, longe acuminata subcaudatave, utrinque glabra supra pallide subtus glauca fide coll., penninervia, nervis 4–6, plus subtus quam supra elevatis, utrinque reticulata. Inflorescentia δ , ∞ umbellulis breviter pedunculatis vulgo internodalis, 5-floris, bracteis 4, pellucidis extus pubescentibus intus glabris, pedicellis $\pm$ 1 mm. longis, perianthii lobis 4, ligulatis pellucidis, extus pubescentibus intus glabris, staminibus 6. Inflorescentia φ et fructus ignoti.

NETHERLANDS NEW GUINEA: 15 km. sw. of Bernhard Camp, Idenburg River, *Brass 12357* (TYPE δ , AA), alt. 1700 m., common in undergrowth of rain-forest gullies, Jan. 1939 (tree 4–5 m. high; leaves very glaucous underneath; flowers yellow).

A species distinguished by long acuminate or subcaudate leaves and glabrous branches and leaves. Perhaps it is near Teschner's *Neolitsea acuminata*, but the leaves are not obtusely acuminate and are larger. It approaches also *N. glabra* Teschner, but again the leaves are larger, and the costa is only slightly impressed above, if at all.

Neolitsea Brassii, spec. nov.

Arbor 6–7 m. alta, ramulis rubescentibus striatis glabris. Folia alternata, ovata vel elliptico-ovata vel elliptica, 6–9 cm. longa, 3–5 cm. lata, subcoriacea, obtusa vel obtuse acuta, utrinque glabra, opaca subtus grisea, triplinervia, nervis in jugo infimo oppositis ad 0.7 cm. supra laminae basim divergentibus, supra pallidis subtus conspicuis nigrescentibusque, costa supra medium arborescente, venis transversis haud conspicuis, reticulata,

petiolis 1–1.5 cm. longis gracilibus, pubescentibus mox glabris, rubescentibus. Inflorescentia ♂, ∞ umbellulis pedunculatis axillaribus internodalibusque, pedunculis 1–2 mm. longis, 3-floris, bracteis 4, extus pubescentibus intus glabris, pedicellis 3 mm. longis, pubescentibus, perianthii lobis 4, ovatis laceratis, 3 mm. longis extus paullo pubescentibus intus glabris. Inflorescentia ♀ et fructus ignoti.

BRITISH NEW GUINEA: Western Division, Tarara, Wassi Kussa River, *Brass* 8704 (TYPE ♂, AA), common in outskirts of rain-forest, Jan. 1937 (tree 6–7 m., leaves grey underneath; flowers yellow).

Neolitsea Brassii is a distinct species, judging from the descriptions of other species, in that it has the triplinerved venation typical of eastern Asiatic species. It stands out also in perianth characters. The four lobes are only slightly pubescent and are not strap-shaped and acute at the apex but more ovate. The number of flowers in the umbel is less than appears to be usual in the case of the New Guinean species.

***Neolitsea Teschneriana*, spec. nov.**

Arbor parva 6 m. alta gracilis, ramulis gracilibus dense adpresse ferrugineo-pubescentibus. Folia plus minusve subverticillata, elliptico-ovata, 7–12 cm. longa, 3–5.5 cm. lata, chartacea, acuta vel acuminata, saepe falcata, supra sparse minuteque pilosa, pallida, subtus dense ferrugineo-pilosa (praesertim juvenilia), triplinervia, nervis lateralibus 2–5 supra haud subtus prominentibus pubescentibusque, venis transversis subtus aliquid conspicuis, petiolis ad 1 cm. longis dense pubescentibus. Inflorescentia ♂, umbellulis sessilibus vulgo internodalibus, immatura in toto ferrugineo-pubescentibus 5-umbellulis subsessilibus bracteis 4, perianthii lobis 4, ligulatis ciliatis 2 mm. longis extus pubescentibus intus glabris, staminibus 6(?). Inflorescentia ♀ immatura, ∞ umbellulis sessilibus, vulgo internodalibus, ferrugineo-pubescentibus.

NORTHEASTERN NEW GUINEA: Morobe District, Sattelberg, *Clemens* 824 (TYPE ♂, AA), alt. 900 m., Nov. 8, 1935 (tree 6 m., slender; flowers yellowish; fruit dark or black); same locality, *Clemens* 1255, alt. 750–990 m., Dec. 19, 1935. BRITISH NEW GUINEA: Owen Stanley Range, between Mts. Brown and Clarence, *Brass* 1510 (♀, AA), alt. 1220–1525 m., May 19, 1926 (tall virgate bush; leaves grey below; flowers white, in lateral clusters).

This species is distinct because of the rusty brown dense appressed pubescence on the slender branchlets and the lower surface of the leaves and petioles. Due to the fact that the flowers are immature, the exact number of stamens is uncertain. From the type of inflorescence and the perianth lobes, and with the data which can be gleaned from the young flowers, it is probable that the number of stamens is six, in accordance with related species of *Neolitsea*.

Clemens 1255 is undoubtedly the same species, but the leaves for the most part appear to be smaller than those of the type. *Brass* 1510 shows slight differences in the less triplinerviate condition of the leaves, but the pubescence, type of inflorescence, etc., make it impossible to associate the number with any other known species or to set it apart as a distinct one. The species is named in honor of Prof. H. Teschner, who has contributed the major portion of the published taxonomic work on Papuan Lauraceae.

Litsea Lamarck**Litsea fulvosericca**, spec. nov.

Arbor 32 m. alta, ramis glabrescentibus, ramulis minute pubescentibus angulatis ad nodos complanatis brunnescentibus. Folia alternata, elliptica, (4-)8-11.5 cm. longa, (2-)4-5.5 cm. lata, coriacea, obtusa vel subrotundata et leviter retusa, basi attenuata acuta supra glabra, juniora glabrescentia, subtus adpresse fulvo-sericeo-pubescentia, penninervia, nervis 7-8 supra inconspicuis impressis subtus elevatis plus minusve pubescentibus, venis transversis subparallelis inconspicuis, petiolis crassis 0.5-1 cm. longis fuscis minute pubescentibus. Inflorescentiae ♂ et ♀ ignotae. Infructescentia axillaris et caulina, racemosa, ad 3 cm. longa, minute plus minusve fulvo-pubescentia, ad 5-fructigera, pedunculis crassis $\pm$ 1 cm. longis pubescentibus. Fructus ruber fide coll., glaber, ellipsoideus, apice basique attenuatus, 0.1×0.8 cm., calyce undulato patente discoideo glabrescente 6 mm. diam., pedicello crasso 2-3 mm. longo pubescente.

NETHERLANDS NEW GUINEA: 6 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh* 12520 (TYPE fruit, AA), alt. 1200 m., frequent in forest of the slopes, Feb. 15, 1939 (tree 32 m. high, diameter 40 cm.; crown not widespreading; bark 8 mm. thick, brown, scaly; sapwood light brown; heartwood red-brown; fruit dark red).

The most outstanding feature of the species is the fulvous appressed sericeous pubescence on the lower leaf-surface. The small fruits, occurring in racemes on the branchlets or in leaf axils, and subtended by a rigid flaring calyx that is at once disc-like and fluted, present other distinguishing characters.

Litsea crenata, spec. nov.

Arbor magna, ramulis glabris, junioribus griseo-brunneo-pubescentibus, teretibus cicatricosis, cicatricibus foliorum delapsorum striatis griseo-murinis, junioribus rubescentibus, novellis subferrugineo-tomentosis. Folia alternata, irregulariter elliptica, raro subobovata, 6.5-9 cm. longa, 3-4.5 cm. lata, coriacea, obtusa vel obtuse subacuminata, raro acuta, basi cuneata vel obtusa, supra costa et nervis exceptis glabra, subtus pubescentia mox glabrescentia, penninervia, nervis 4-6(-7), inaequalibus, nervis et costa supra impressis canescentibus, junioribus plus minusve subferrugineo-pubescentibus, subtus elevatis subferrugineo-pubescentibus, utrinque minute reticulata, petiolis ad 1.5 cm. longis varie pubescentibus rubescentibus. Inflorescentia ♂ et ♀ ignotae. Infructescentia caulina, ut videtur 1-umbellata, ad 3 cm. longa, pallide brunnescens, glabrescens, pedunculis $\pm$ 5 mm. longis. Fructus niger et nitidus fide coll., glaber, ellipsoideus, apiculatus, 1.8×1.2 cm., calyce crasso undulato-crenato, glabrescente vel glabro, griseo-brunneo 4 mm. longo, 3 mm. crasso.

BRITISH NEW GUINEA: Central Division, Bella Vista, *Brass* 5469 (TYPE fruit, NY; AA), alt. 1450 m., large tree in oak forest, Nov. 8, 1933 (fruit black, shining). NORTH-EASTERN NEW GUINEA: Morobe District, Yunzaing, *Clemens* 6561A (AA), alt. 1370 m., June 18, 1937; same locality, *Clemens* 6445 (AA), June 21, 1937.

On the whole, the Clemens plants have leaves more glabrous and less irregular as to outline and venation. The specimens are in a younger stage than those of the type, the fruit being immature. Temporarily, at least, they are referred to *L. crenata*. The undulate-crenate disc or calyx subtending the ellipsoid fruit is a good character. The grayish brown or

murinus branchlets, which in the young stages, as well as the young leaves, are covered with almost a ferrugineous pubescence, present another distinction.

***Litsea breviumbellata*, spec. nov.**

Arbor parva, ramulis glabris, junioribus breviter ferrugineo-tomentosis, teretibus striatis griseis vel murinis. Folia alternata, lanceolato-elliptica vel leviter et anguste obovata, 9.5–13.5 cm. longa, 4–5 cm. lata, subcoriacea, acuta vel leviter subacuminata, basi obtusa vel subrotundata, supra costa et nervis exceptis glabra, subtus pubescentia, penninervia, nervis 8–10, supra impressis subtus conspicuis elevatis ferrugineo-tomentosis, venis transversis subparallelis conspicuis, utrinque minute reticulata, petiolis gracilibus ad 1.2 cm. longis ferrugineo-tomentosis mox glabrescentibus. Inflorescentia ♂ axillaris et caulina, fasciculata, 1–3 umbellata, ad 8.9 mm. longa, pedunculis gracilibus 3–4 mm. longis pubescentibus. Flores 4–8(–?), ± 3.5 mm. longi, ferrugineo-pubescentes, staminibus exsertis, pedicellis ± 2 mm. longis pubescentibus. Inflorescentia ♀ axillaris et subterminalis, caulina, fasciculata, 1–3(–?), umbellata, plerumque singula persistens, ad 8 mm. longa, ferrugineo-pubescentia, pedunculis 2–3 mm. longis pubescentibus. Flores ♀ 3–4(–?), ± 3.5 mm. longi, ferrugineo-pubescentes, pedicellis ± 1 mm. longis. Infructescentia ± 2 cm. longa, glabrescens, pedunculis crassis ad 1 cm. longis. Fructus probabiliter immaturus?, viridibrunnescens, glaber, ovoideus, apiculatus, 8×5 mm., calyce parvo discoideo ± 4 mm. diam., pedicello paullo crasso pubescente ± 3 mm. longo.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7585 (TYPE ♂, AA), Aug. 1936 (small tree of rain-forest substage); same locality, *Brass* 7700 (♀, fruit, AA), in 1936 (rain-forest substage tree).

For the relationships of this species one must look to the Chinese and Indian floras. Most outstanding are the short umbels and exserted stamens of the ♂ flowers, and the warm, light rust color of their pubescence and that of the leaves as well, in the dried state at least. The ♀ flowers are smaller than the ♂ and the branchlets of the former are less grey than reddish brown, with a tendency toward more pubescence in the older parts. Otherwise both specimens are much the same.

***Litsea alveolata*, spec. nov.**

Arbor 5–8–15 m. alta, ramis erectis fide coll., ramulis glabrescentibus angulatis striatis griseo-nigrescentibus, junioribus breviter brunnescentelanatis. Folia alternata, subrotundata, plus minusve rotundato-ovata, elliptica, 7 mm.–9 cm. longa, 6 mm.–4 cm. lata, percoriacea, apice basique rotundata, saepe leviter obtuse subacuta, margine revoluta, brunnea fide coll., supra costa nervisque exceptis glabra, juniora pubescentia, subtus dense breviter brunneo-lanata, penninervia, nervis 4–6 (plerumque 5) 30° sub angulo divergentibus, supra perimpressis subtus elevatis brunneis utrinque pubescentibus supra inconspicue subtus conspicue et prominenter alveolata, petiolis crassis ± 1 cm. longis fuscis pubescentibus. Inflorescentia ♂ axillaris et terminalis (?) umbellato-racemosa, ad 3 cm. longa, umbellis ad 10, infimis mox deciduis, 3–4 apicalibus persistentibus pubescentibus, bracteis 4 pubescentibus glaucis, pedunculis 1–3 mm. longis pubescentibus. Flores ± 2 , 2–2.3 mm. longi, flavi fide coll., extus longe sparseque ferrugineo-pubescentes, intus glabri, perianthii lobis 6–8-ciliolatis. Inflorescentia

♀ ignota. Infructescentia ut videtur terminalis, brevis, $\pm$ 3.5 cm. longa, glabra, plerumque fructum unicum maturante. Fructus brunnescens, in sicco nitidus, rugosus, glaber, ellipsoideus, apice basique attenuatus, apiculatus, $\pm$ 2.5 cm. longus, $\pm$ 1.3 cm. latus, calyce crasso patenti-discoideo glabro $\pm$ 1 cm. diam., pedicello crasso griseo rugoso $\pm$ 5 mm. longo, 5–6 mm. lato.

NETHERLANDS NEW GUINEA: Lake Habbema, 3225 m. camp, *Brass* 9559 (TYPE ♂, fruit, AA), alt. 3225 m., common in mossy closed forest, Aug. 1938 (tree 5–8 m. high; branches erect; foliage brown); 9 km. ne. of Lake Habbema, 2800 m. camp, *Brass* 10708 (♀ AA), alt. 2800 m., plentiful in forest substage, Oct. 1938 (tree attaining 15 m.; flowers yellow).

This species is very close to *L. Versteeghii* Allen, the main difference being the size of the leaves. The former has leaves usually 8–9 cm. long, the latter 3–4 cm. long. Both, however, have the same range in leaf length. The lateral nerves of *L. alveolata* tend to branch at an angle of 30° , whereas those of *L. Versteeghii* approach 45° . *Litsea Versteeghii* has longer inflorescences with a larger number of flowers persisting at the tip, but on the bracts enclosing the umbels on both species there is a conspicuous bloom. The ultimate reticulation of the leaves of *L. Versteeghii* is rather more coarse and more apparent on the upper surface than the fine alveolate condition of those of *L. alveolata*. On the lower surface of *L. alveolata* the heavy lanose pubescence, instead of obscuring the alveoli, makes them even more striking.

***Litsea Versteeghii*, spec. nov.**

Arbor ad 25 m. alta, ramulis glabrescentibus mox glabris, junioribus dense pallide brunneo-tomentosis, rimosis griseis. Folia alternata, elliptica, ad 10.5 cm. longa, 4–5.5 cm. lata, coriacea, rotundata vel obtusa, supra nervis costaque exceptis glabra, subtus dense mollissime pubescentia, mox sparse pubescentia, penninervia, nervis 5–7 utrinque pubescentibus mox glabris supra impressis subtus elevatis, venis transversis subtus conspicuis, supra areolata, subtus conspicue reticulata, petiolis crassis ad 1.5 cm. longis, fuscis glabrescentibus, junioribus dense pubescentibus. Inflorescentia ♂ axillaris, in axillis foliorum delapsorum umbellato-racemosa, ad 6.5(–8) cm. longa, umbellis numerosis, infimis mox deciduis, 3–12 apicalibus maturantibus pubescentibus $\pm$ 4-floribus, bracteis 4 extus pubescentibus glaucis pubescentibus conspicue venosis, ciliolatis glanduloso-punctatis, pedunculis ad 1 cm. longis pubescentibus. Flores 3–4 mm. longi, extus longe rubescenti-pubescentes, minute punctati. Inflorescentia ♀ et fructus ignoti.

NETHERLANDS NEW GUINEA: Bele River: 18 km. ne. of Lake Habbema, 2200 m. camp, *Brass & Versteegh* 11162 (TYPE ♂, AA), alt. $\pm$ 2400 m., rare tree of secondary forest, on the slope of a ridge, Nov. 25, 1938 (tree 25 m. high, diam. 35 cm.; crown not widespreading; bark 3 mm. thick, fairly smooth; wood soft brown; unopened flowers green; open flowers brown); same locality, *Brass* 11466 (AA), alt. 2450 m., occasional tree in forest undergrowth, Nov. 1938 (tree 5–6 m. high; leaves stiff, glaucous underneath; flowers brown).

This species is unusual in that the umbels of the lower two-thirds of the raceme are deciduous, only about twelve or less remaining on the stalk. The umbels themselves are rather long, pedunculate, and subtended by pubescent glaucous bracts. The leaves are areolate above, softly pubescent

and glaucous below, and reticulate. The branches are greyish with longitudinal fissures which may indicate lenticels. Only occasionally are the fissures horizontal. In spite of the difference in the height of the tree, there seems to be no doubt that *Brass 11466* is conspecific with the type. The collection represents an earlier stage than the type, for the umbels have not yet fallen from the lower part of the raceme.

***Litsea papillosa*, spec. nov.**

Arbor parva, ad 15 m. alta, ramulis glabris subteretibus striatis griseis, junioribus fuscis. Folia alternata, oblonga vel oblongo-elliptica, ad 12 (?) cm. longa, ad 6 cm. lata, subcoriacea, acuta, basi acuta vel cuneata, utrinque glabra, supra obscure, subtus conspicue dense minuteque papillosa, penninervia, nervis plicatinerviis 4–5 supra paullo elevatis subtus conspicue elevatis, costa supra impressis, subtus elevatis, venis transversis supra conspicuis subtus satis obscuris, petiolis aliquid crassis, canaliculatis ad 8 cm. longis fuscis glabris. Inflorescentia ♂ breve, axillaris et caulina, brachypodiis brevibus, subumbellatis sessilibus fasciculatis glabris 5 mm. longis. Flores post anthesin pallide virides fide coll. Inflorescentia ♀ ignota. Infructescentia ad 2 cm. longa, glabra, ad 7-fructigera. Fructus aurantiacus, glaber, subglobosus, apiculatus, 8×6.5 mm. (fide coll. 10×9 mm.) calyce crassato discoideo 3 mm. diam. subtentus, pedicello crassato ad 7 mm. longo basi 1 mm., apice 2 mm. diam., brunnescente glabro.

SOLOMON ISLANDS: Guadalcanal: Uulolo, Tutuve Mt., *Kajewski 2563* (TYPE ♂, AA), alt. 1200 m., common in rain-forest, April 24, 1931 (small tree up to 15 m. high; flower light green; fruit orange when ripe, length 1 cm., diameter 9 mm., with circle at end; the kernels of this fruit are eaten by the natives; common name: "Com comu").

Although the leaves are fragmentary and there are no flowers left, the characters of this species are such that it must be recognized at once as new. The papillose or glandular condition of the subcoriaceous, more or less oblong leaves, few-veined and plinerviate, are distinctive. The numerous inflorescences borne in fascicles on short brachypods represent a character easily recognised. There is a possibility that this might be a *Lindera*, but the leaves and general habit seem to deny it a place in this genus, and so for the present I place it in *Litsea*.

***Litsea habbemensis*, spec. nov.**

Arbor 29 m. alta, ramulis glabrescentibus mox glabris, junioribus pallide denseque adpresse ferrugineo-pubescentibus angulatis ad nodos complanatis, striatis nigrescentibus. Folia alternata, variatim elliptica, ad 11 cm. longa, ad 5 cm. lata, coriacea, subacuminata vel subacuta, basi cuneata, raro rotundata, raro inaequalia, utrinque glabra, in sicco subcastanea, penninervia, nervis 4–6, supra impressis subtus elevatis, obscure plicatinerviis, venis transversis parallelis subtus conspicuis, supra conspicue subtus obscure reticulata, petiolis gracilibus 2 cm. longis, nigrescentibus pubescentibus mox leviter glabrescentibus. Inflorescentia ♂ axillaris, subumbellato-racemosa, umbellis inferioribus cito deciduis, ad 3 cm. longa, ferrugineo-pubescentibus, bracteis 4, umbellis 2–8, 5–6 mm. longis. Flores ± 5 , ad 5 mm. longi, flavi, fide coll., adpresse sericeo-fulvo pubescentes, pedicellis 3 mm. longis adpresse fulvo sericeo pubescentibus. Inflorescentia ♀ et fructus ignoti.

NETHERLANDS NEW GUINEA: Bele River, 18 km. ne. of Lake Habbema, 2200 m. camp, *Brass & Versteegh 11155* (TYPE ♂, AA), alt. $\pm$ 2350 m., occasional in primary rain-forest, Nov. 22, 1938 (tree 29 m. high, diameter 33 cm.; crown not widespreading; bark 6 mm. thick, grey, rough; wood dark yellow; flowers yellow).

The numerous pedunculate umbels, pale reddish brown in color, and the glabrous reticulate leaves, more or less castaneous below, present a striking contrast with the blackish angled branchlets somewhat flattened at the nodes. The venation of the leaves is very well defined. The costa and lateral nerves are as conspicuous above by being extremely impressed as below by being elevated.

Litsea morobensis, spec. nov.

Arbor, ramis glabris teretibus striatis griseis brunneo-maculosis, ramulis breviter rubescenti-pubescentibus subangulatis. Folia opposita, lanceolata, 6.5–17 cm. longa, 2.5–5 cm. lata, coriacea, obtusa, raro obtuse subacuminata vel retusa, basi obtusa, supra glabra, subtus rubescenti-pubescentia, penninervia, nervis 5–8, supra impressis subtus elevatis brunnescentibus, venis transversis supra magis obscuris subtus conspicuioribus, subtus reticulata, petiolis 1–2.5 cm. longis rubescentibus minute pubescentibus. Inflorescentia ♂ axillaris et caulina, fasciculata, umbellata, 0.5–2 cm. longa, minute rubescenti-pubescentia, pedunculis gracilibus ad 1.5 cm. longis, bracteis 4, rubescenti-pubescentibus glanduloso-punctatis, marginibus scariosis, ciliolatis. Flores $\pm$ 3 extus rubescenti-pubescentes. Inflorescentia ♀, ♂ similes. Fructus ignotus.

NORTHEASTERN NEW GUINEA: Morobe District, Ogeramnang, *Clemens 5327A* (TYPE ♂, AA), alt. 1765–1830 m., Feb. 8, 1937; *5539* (♀, AA), alt. 1765 m., March 1, 1937.

The specimens are poor, but do not match any other known species. There is a similarity to several Pacific Island species, but variation appears on detailed examination. There seems to be no outstanding characters that mark the species as distinct. More abundant material will probably reveal distinctions or place it within the limits of an already known and variable species.

Litsea perlucida, spec. nov.

Arbor magis gracilis 20 m. alta, ramulis glabris teretibus striatis griseo-rubrescentibus. Folia alternata, late elliptica, (12–)15–18 cm. longa, (6.5–)10–10.5 cm. lata, coriacea, utrinque rotundata, saepe retusa, utrinque glabra, supra perlucida, subtus leviter glauca fide coll., utrinque in sicco castanea, penninervia, nervis $\pm$ 8, infimis $\pm$ 30° sub angulo divergentibus utrinque conspicuis flavo-brunneis, fide coll., in sicco brunneis supra planis subtus leviter elevatis, costa crassa utrinque conspicua subtus elevata, petiolis crassis 2.5–4 cm. longis nigrescentibus glabris. Inflorescentia ♂ axillaris et caulina, fasciculata, 1–2-umbellata, ad 1.5 cm. longa, glabra, pedunculis gracilibus $\pm$ 1 cm. longis, bracteis $\pm$ 6, extus pilosis marginibus scariosis glandulo-punctatis. Flores $\pm$ 5, $\pm$ 3 mm. longi, pallide flavi, fide coll., perianthii lobis extus pubescentibus glanduloso-punctatis, staminibus $\pm$ 12. Inflorescentia ♀ et fructus ignoti.

BRITISH NEW GUINEA: Central Division, Mafulu, *Brass 5378* (TYPE ♂, AA), alt. 1100 m., common in second storey of tall lower level forest, Oct. 26, 1933 (rather slender tree 20 m. high; bark dark brown, finely scaly; leaves glossy, slightly glabrous (glaucous?) underneath, the nerves conspicuous, yellow-brown; flower pale yellow).

Very striking is this species, glabrous except for leaf buds and flowers. The very broadly elliptical glossy leaves, rounded at base and apex, with conspicuous yellow nerves, in dried state brownish against the lighter chestnut of the leaf blade, are supported by stout glabrous black petioles up to 4 cm. long. The foliage and black petioles present a strong contrast to the greyish branchlets exfoliating to show here and there patches of red.

Litsea Brassii O. C. Schmidt in White in Jour. Arnold Arb. **10**: 214. 1929.

BRITISH NEW GUINEA: Lower Fly River, Gaima (E. bank), *Brass* 8286 (AA), common in rain-forest outskirts, Nov. 1936 (small tree 4–5 m. high; leaves greyish pubescent below).

Litsea bernhardensis, spec. nov.

Arbor $\pm$ 30 m. alta, ramulis minute denseque atro-rubescenti-pubescentibus angulatis. Folia alternata, obovata, 18–23 cm. longa, 12–14 cm. lata, subcoriacea, acuta vel abrupte obtuse acuminata, basi rotundata, raro subaequalia supra glabra, subtus glauca, sparse atro-rubescenti-pubescentia, in sicco viridescenti-brunnea, penninervia, nervis 8–10, supra impressis subtus elevatis conspicue atro-rubescenti-pubescentibus, venis transversis supra obscuris subtus conspicuis subparallelis, petiolis crassis, ad 4.5 cm. longis minute atro-rubescantibus. Inflorescentia δ et η ignotae. Infructescentia axillaris et caulina, breviter pedunculata, 1–2 umbellata, ad 4 cm. longa, atro-rubescens, umbellis pedunculis crassis. Fructus sessiles, virides fide coll., glaber, subglobosus, apiculatus, 11 $\times$ 10 cm., calyce discoideo crasso rugoso-striato glabro $\pm$ 8 mm. diam., tubo $\pm$ 1 cm. longo rugoso-striato, apice $\pm$ 6 mm. lata.

NETHERLANDS NEW GUINEA: Bernhard Camp, Idenburg River, *Brass & Versteegh* 13568 (TYPE, AA), alt. 570 m., occasional tree of primary rain-forest on the slope of a ridge, April 13, 1939 (tree $\pm$ 30 m. high, diameter 51 cm.; crown not widespreading; bark 15 mm. thick, brown, scaly, rough; wood brown; fruits green).

So outstanding is the fruiting specimen of this species that there seems to be no doubt that it is new. The large obovate leaves are dark on the herbarium specimen and rather sparsely covered on the lower surface with reddish black curly pubescence. The same type of pubescence, but shorter and closer, is found on the branchlets and petioles. The venation of the leaves is also reddish black. The short disc-like calyx and the thickened tube are also distinctive.

Litsea Whiteana, spec. nov.

Arbor ad 20 m. alta, ramulis ferrugineo-pubescentibus mox glabrescentibus demum glabris teretibus striatis pallide rubescenti-brunnescentibus. Folia alternata, elliptica vel obovata, 17–21 cm. longa, 8.5–10 cm. lata, chartacea vel leviter subcoriacea, acuta vel obtusa, supra glabra, subtus sparse pubescentia, in sicco subcastanea, penninervia, nervis $\pm$ 15 supra impressis subtus elevatis pubescentibus rubescentibus, inferioribus subhorizontalibus ad apice sub angulo 45° divergentibus, costa supra conspicua leviter canaliculata subtus elevata rubescentia, venis transversis subtus leviter elevatis, supra minute punctata, subtus reticulata, petiolis crassis $\pm$ 2 cm. longis rubescentibus dense breviter ferrugineo-pubescentibus mox glabris. Inflorescentia δ immatura, axillaris et caulina, subfasciculato-7–10-umbellata, ad 1–1.5 cm. longa, dense breviter ferrugineo-pubescentibus,

bracteis 4 canescentibus sparse rubescenti-pubescentibus, pedunculis $\pm$ 5 mm. longis umbellarum pedunculis $\pm$ 5 mm. longis. Flores solitarii, immaturi, perianthiis nullis, staminibus numerosis $\pm$ 15. Inflorescentia $\varnothing$ breviora, quam σ , fasciculato- 10-14+-umbellata, umbellarum pedunculis $\pm$ 1.5 mm. longis, bracteis 4 extus sparse pubescentibus glanduloso-punctatis marginibus scariosis. Flores solitarii, subsessiles, $\pm$ 2.5 mm. longi, perianthiis nullis vel abortivi, staminodiis numerosis, $\pm$ 16, variabilibus, ovarium probabiliter ovoideum, pubescens, stigmatibus sessilibus, pseudo-peltato, fimbriato, crenulato. Fructus ignotus.

SOLOMON ISLANDS: Bougainville: Koniguru, Buin, *Kajewski* 2034 (TYPE σ , AA), alt. 850 m., common in rain-forest, Aug. 7, 1930 (medium-sized tree up to 20 meters high; buds green; sepals green; receptacle red; stamens numerous, cream green; wood used for rafters in ceremonial houses; common name: "Kokitie-kegie"); Kugumaru, Buin, *Kajewski* 1922 ($\varnothing$, AA), alt. 150 m., common in rain-forest, July 4, 1930 (medium-sized tree up to 20 meters high; buds green; common name: "Mar-gul-ah-tuku").

A large-leaved species with reddish brown branchlets. The leaves of the $\varnothing$ specimen are larger than those of the σ and are more nearly chartaceous than subcoriaceous; also the pubescence throughout is more dense.

The species is named for Mr. C. T. White, Government Botanist of the Brisbane Botanical Gardens, long interested in the Papuanian flora.

Litsea perglabra, spec. nov.

Arbor ad 20 m. alta, ramulis glabris teretibus dense striatis griseis vel pallide rubescentibus. Folia alternata, elliptica, (12-)14-21 cm. longa, (6.5-)7-9.5 cm. lata, coriacea, obtusa, raro retusa, basi acuta, inaequalia, glabra, in sicco viridescenti-castanea, penninervia, nervis $\pm$ 8 utrinque conspicuis, in sicco rubescentibus subtus elevatis, costa supra impressa subtus conspicuis elevatis, petiolis sat crassis ad 3.5 cm. longis rubescentibus glabris. Inflorescentia σ immatura, axillaris, fasciculata, 5+-umbellata, ut videtur breviter pedunculata, ad 8 mm. longa, minute brunneo-pubescens, bracteis pubescentibus glanduloso-punctatis. Flores $\pm$ 4, perianthii lobis extus pubescentibus, glanduloso-punctatis. Inflorescentia $\varnothing$ ignota. Infructescentia $\pm$ 5 cm. longa, glabra, 1-2-fructigera fide coll. Fructus ruber, maculosus fide coll., glaber, ellipsoideus, 3 $\times$ 2 cm., calyce patelliformi, rigido leviter undulato glabro, in sicco brunneo, pallide guttato striato 4 mm. longo 2 cm. diam., pedicello crasso 4 mm. longo apice 6 mm. lato, pedunculo crasso striato brunneo 6 mm. longo.

SOLOMON ISLANDS: Guadalcanal: Berande, *Kajewski* 2414 (TYPE σ , AA), common in rain-forest at sea level, Jan. 6, 1931 (large tree up to 20 m. high; well advanced flower buds only on specimens; this timber is used by the natives in house-building); San Cristoval: Waimamura, *Brass* 2714 (fruit, AA), common in rain-forest on coastal hills, Aug. 22, 1932 (erect tree 10 m. high, with thin brown bark; leaves glaucous below; petioles, midrib and main nerves yellowish; fruit solitary or in lateral prs. below leaves, 4.5 cm. long by 2.5 cm. diam., smooth, dark mottled red, resting in an enlarged truncate calyx).

So close is this species seemingly to *L. perlucida* (described above) that it was set apart as distinct with some hesitation. The main reason was the difference in number of petals and stamens. *Litsea perlucida* has eight petals and sixteen or more stamens, whereas *L. perglabra* has four petals and about twelve stamens. The obvious difference is the shape of the leaves,

their other characteristics being the same. Brass mentions in the field notes for number 2714 the glaucous lower leaf surface and the yellowish nerves.

***Litsea solomonensis*, spec. nov.**

Arbor ad 20 m. alta, ramulis glabris teretibus striatis rubescentibus griseo-maculatis, junioribus rubescentibus sparse pubescentibus. Folia alternata, late lanceolata, saepe oblique, 12–15(–20) cm. longa, 3.5(–6.5) cm. lata, chartacea vel subcoriacea, obtusa vel attenuato-acuta, saepe mucronata utrinque glabra, subtus argentea fide coll., penninervia, nervis ad 6, gracilibus supra pallidis subtus leviter elevatis sub angulo $\pm 45^\circ$ divergentibus, supra plus minusve reticulata, petiolis ad 1.5 cm. longis fuscis glabris. Inflorescentia δ axillaris vel caulina, fasciculata, 2–3 umbellata, ad 2.3 cm. longa, minute pubescens, bracteis 4, ciliolatis marginibus scariosis glanduloso-punctatis laceratis, pedunculatis gracillimis ad 1.5 cm. longis. Flores ± 5 , 6–7 mm. longi, extus pubescentes, albi, fide coll. Inflorescentia η ignota. Infructescentia ad 3 cm. longa, pedunculis crassis glabrescentibus. Fructus rubescens, maculatus fide coll., glaber, compresso-globosus, 1.5 cm. longus, 1.2 cm. latus fide coll., cupula 4 mm. longa, 1.2 cm. diam., glabrescente minute tuberculata, pedicello crasso fusco ad 4 mm. longo.

SOLOMON ISLANDS: *Y s a b e l*: Maringe, *Brass 3183* (TYPE δ , AA), alt. 150 m., rain-forests on limestone hills, Nov. 23, 1932 (tree 20 m. tall; bark greenish tuberculate, brown when cut; leaves pale, slightly grey beneath; flowers white; common name: "Nolahi"). *B o u g a i n v i l l e*: Marmaromino, *Kajewski 2200* (fruit, AA), alt. 50 m., common in rain-forest, Sept. 29, 1930 (medium-sized tree up to 20 meters high; leaves green on top, silvery underneath; fruit pink, green when ripe; calyx adhering to fruit, length 1.5 cm., diameter 1.2 cm., flattened at one end and covered with light spots; common name: "Lu-ellia"); same locality, Kugumaru, Buin, *Kajewski 1846* (AA), alt. 150 m., common in rain-forest, June 10, 1930 (large tree up to 20 meters high; leaves silvery beneath; well advanced green flower-buds only on specimen; common name: "Tuge-lear"). *S a n C r i s t o v a l*: Waimamura, *Brass 2652* (AA), one tree seen in lowland rain-forest, Aug. 15, 1932 (tree 50 ft. tall, with thin brown bark marked with narrow slightly raised horizontal lines; wood soft, yellow; leaves stiff, grey below; unripe fruit bright red; ripe fruit reddish black, about 1.5 cm. diam.; fruiting calyx coloured green). *G u a d a l c a n a l*: Ma-massa, Konga, *Kajewski 2470* (AA), alt. 500 m., common in rain-forest, Feb. 8, 1931 (medium-sized straight-barrelled tree up to 20 m. high; fruit plum-coloured when ripe, length 1.5 cm. diam. 1.4 cm., with a flattened end; the bark of this tree is macerated with water and applied to sore legs; common name: "Arli-arli"). *M a l a i t a*: Quoi-mon-apu, *Kajewski 2350* (AA), common at sea level in rain-forest, Dec. 13, 1930 (medium-sized tree up to 20 m. high; leaves silvery underneath; bracts green, enclosing 5 flowers radiating out from the stem; this wood is used for making uprights of houses by the natives; common name: "Sa-sar-su").

BRITISH NEW GUINEA: Lower Fly River, E. bank opposite Sturt Island, *Brass 8106* (AA), a common substage tree on flood plains in rain-forest, Oct. 1936 (leaves grey underneath; flowers yellow).

Apparently the species is wide-spread throughout the Solomon Islands and is common in New Guinea, fide coll., even though only a single collection from the latter island is at hand. The pale lower surface of the blunt lanceolate leaves is a striking feature. Distinct also are the slender peduncled umbels of the δ inflorescence and the flattened globose fruit subtended by a somewhat shallow cupule which, as the fruit shrinks in drying, flattens and becomes fluted. The striate branchlets, reddish with greyish maculations, are consistent throughout. The New Guinean speci-

men has larger leaves but can in no other way be separated from those from the Solomon Islands. It is necessary to turn to species from Malaysia and from the Philippines to find any affinity to *L. solomonensis*, and even so the relationship is not close. Vegetatively the new species resembles *L. cambodiana* Lct. from Indochina, but the similarity ends there, for the latter has a racemose instead of umbellate inflorescence.

***Litsea complanata*, spec. nov.**

Arbor, ramulis minute sparseque puberulentibus teretibus, junioribus angulatis et complanatis, striatis pallide brunneo-maculosis lenticellatis atro-brunnescentibus. Folia alternata, elliptica vel oblongo-elliptica, 13–22 cm. longa, 6–11 cm. lata, chartacea, obtuse acuminata, acumine mucronulato, raro obtuse acuta, basi cuneata vel acuta, utrinque glabra, supra atro-brunnescentia, subtus pallida, penninervia, nervis 3–4(–5) plerumque alternatis, nervis et costa supra puberulis leviter elevatis subtus glabris conspicue elevatis atro-brunnescentibus angulatim arcuatis, venis transversis utrinque conspicuis, petiolis satis gracilibus 3–4 cm. longis atro-brunnescentibus glabris. Inflorescentia ♂ axillaris et caulina, numerosa, racemosa, vel racemoso-paniculata, 2–4 cm. longa, glabrescens, junior pallide pubescens, umbellata, bracteis minutis ad 1 mm. longis dense pubescentibus persistentibus glanduloso-punctatis, umbellis 4–5 apicalibus exceptis cito deciduis. Flores $\pm$ 4, 3–4 mm. longi, extus pubescentes, pedicellis 3(–5) cm. longis gracilibus pubescentibus. Inflorescentia ♀ et fructus ignoti.

NORTHEASTERN NEW GUINEA: Morobe District, Butung R., *Clemens* 5358 (TYPE ♂, AA), alt. 870 m., Feb. 9, 1937; Sattelberg, *Clemens* 1891 (AA), alt. 1050 m., Feb. 1936; Sattelberg, *Clemens* 1061 (AA), alt. 1020–1220 m., Dec. 3, 1935.

The dark, blackish-brown, terete, striate stems, covered with paler brownish lenticels about which is a distinct patch of color, represent an unusual character. The very young branchlets appear distinctly angular and flattened, particularly at the nodes. The chartaceous leaves, darkened above and paler below, with few (3–4–5) lateral nerves, usually not all opposite, which are arcuate and more often than not angularly so, present another character. The tip of the leaf varies from obtusely acuminate to narrowed to an obtuse tip; the tip in all cases bears a persistent mucron which has grown faster than the surrounding leaf tissue, the latter often appearing to be involute about the mucron. The numerous inflorescences, usually more than one from an axil, may branch into three at the tip, but usually there is a single stalk with 4–5 persistent flowers near the apex. The rest of the flowers are very quickly deciduous after the inflorescence reaches its full length, leaving only the small pubescent bracts on the branchlets. *Clemens* 1891 has smaller leaves and more numerous inflorescences, but there seems no doubt of its being conspecific with the other numbers.

Litsea domarensis O. C. Schmidt in White in Jour. Arnold Arb. **10**: 215. 1929.

Inflorescentia ♀ axillaris vel caulina, fasciculata plus minusve umbellata, ad 1.3 cm. longa, breviter dense pallide ferrugineo-sericeo-pubescens, umbellis plerumque 2–3 persistentibus, bracteis 4, pubescentibus ciliolatis. Flores $\pm$ 6, 4.5 mm. longi, brunnescentes, argenteo-pubescentes, perianthii lobis 6, 2 mm. longis, tubo 2.5 mm. longo, pedicello 0.5 mm. longo. Infruc-

tescentia ad 2.5 cm. longa, pedunculis plerumque gracilibus subangulatis striatis leviter pubescentibus. Fructus nitidus, niger fide coll., glaber, ellipsoideus, $\pm 11 \times 9.5$ mm., fide coll., cupula incrassata, rugosa leviter pubescente ± 5 mm. longa, ± 8 mm. diam., pedicello satis crasso pubescente ad 4 mm. longo.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7559 (♀, AA), common in rain-forest substage, Aug. 1936 (tree 14–15 m. high); Lower Fly River: E. bank opposite Sturt Island, *Brass* 7982 (AA), common on the lower ridges in rain-forest, Oct. 1936 (spur-buttressed canopy tree 25 m. high; bark close, lenticellate; leaves grey underneath; fruit smooth, shining, black, $\pm 11 \times 9.5$ mm.). NORTH-EASTERN NEW GUINEA: Morobe District, Sattelberg, *Clemens* 1893 (AA), alt. 990 m., forest hills, Feb. 21, 1936 (tree, dbh. 15.2–21 cm.; flower buds grey-yellowish); same locality, *Clemens* 1896 (AA), alt. 750–900 m., Feb. 25, 1936; Finschafen, hospital hill, *Clemens* 79, (AA), alt. 150 m., Sept. 5, 1935 (tree 12–15 m.; branches low; buds cream; fruit green).

SOLOMON ISLANDS: Guadalcanal: Uulolo, Tutuve Mt., *Kajewski* 2578 (AA), alt. 1200 m., common in rain-forest, April 26, 1931 (small tree up to 10 m. high; well advanced flower buds on specimens covered with brown hair; common name: "Latembutu").

?NEW BRITAIN. Boava area: *Waterhouse* 283 (*Yale Ser. No.* 27594) (NY), July-Aug. 1934 (leaves tough; common names: "Pulotabu," "Kaviti").

The fruiting specimen *Brass* 7982 is less pubescent than the type, but there can scarcely be a doubt of its being conspecific with *L. domarensis*. *Clemens* 79 from Finschafen was collected at a lower elevation (500 ft.) than the other Clemens numbers. It is a ♀ specimen and shows a deviation from the type in a few minor details. Nevertheless, this seems to be the most logical disposition of it.

***Litsea mafuluensis*, spec. nov.**

Arbor gracilis 15–20 m. alta, ramulis teretibus striatis griseis, ultimis rubescentibus lenticellatis. Folia alternata, elliptica vel obovato-elliptica, (10–)16–21 cm. longa, (4.5–)7–9 cm. lata, subcoriacea, acuminata vel obtuse acuta, basi acuta, supra glabra, costa excepta, subtus breviter pallide pubescentia, penninervia, nervis 6–8 supra impressis subtus elevatis, venis transversis subparallelis, utrinque reticulata, reticulo supra quam subtus conspicuiore, petiolis ad 3.5 cm. longis rubescentibus glabrescentibus. Inflorescentia ♂ axillaris et caulina fasciculata, 2–3-umbellata, ad 2.5 cm. longa, minute pubescens, pedunculis pergracilibus ad 1.5 cm. longis. Flores 4–5, ± 3 mm. longi, flavi fide coll., in sicco extus ferrugineo-pubescentes, perianthii lobis 8, glanduloso-punctatis extus pubescentibus, pedicellis brevibus dense ferrugineo-tomentosis. Inflorescentia ♀ et fructus ignoti.

BRITISH NEW GUINEA: Central Division, Mafulu, *Brass* 5279 (TYPE ♂, AA), alt. 1250 m., common in limestone forest substage, Oct. 15, 1933 (slender tree 15–20 m. high; flowers yellow).

This species belongs in the group with *L. domarensis* Schmidt, also from New Guinea, but can be separated from it by the smaller leaves (those of *L. domarensis* are $16.5\text{--}34 \times 10\text{--}19$ cm.) with never more than ten pairs of nerves. Also close, if one can rely on the description, is *L. Engleriana* Teschner, which may be separated by the densely tomentose lower surface of leaves which have a tendency to be wider (8–20 cm.). The long and very slender peduncles of *L. mafuluensis*, topped by the bright brown (in

dried state) umbels, and the greyish branchlets, which are reddish and heavily lenticellate at the tips, cause the species to stand apart.

Beilschmiedia Nees

Beilschmiedia Archboldiana, spec. nov.

Arbor 22 m. alta, ramulis glabrescentibus obscure striatis, junioribus plus minusve papillois, fusco-brunnescentibus. Folia alternata vel subopposita, lanceolato-elliptica, 6–11.5 cm. longa, 2–4 cm. lata, subcoriacea, acuminata, basi acuta, saepe paullo obliqua, supra nitida lepidoto-papillosa, subtus glauca, minute pubescentia, glandulosa, penninervia, nervis 10–12 supra obscuris subtus leviter elevatis, costa subtus quam supra elevatiore, utrinque laxe conspicueque reticulata, petiolis 3–9 mm. longis 1–1.5 mm. latis minute papillois griseo-pubescentibus. Inflorescentia axillaris et subterminalis, laxa cymoso-paniculata ad 15 cm. longa, adpresse sericeo-fulvo ferrugineo-pubescentibus, multiflora, pedunculis 2.5–9.5 cm. longis striatis brunneis pubescentibus mox glabrescentibus. Flores 1.7 mm. longi, gemmae flavescentes fide coll., perianthii lobis 6, 1.3 mm. longis, extus adpresse pubescentibus, glanduloso-punctatis, pedicellis ad 0.75 mm. longis. Fructus atratus, papillosus, ellipsoideus, 14–16 mm. longus, 9–11 mm. latus.

NETHERLANDS NEW GUINEA: 2 km. sw. of Bernhard Camp, on the Idenburg River, *Brass & Versteegh 13533* (TYPE, AA), alt. 650 m., occasional tree of primary rain-forest on the slope of a ridge, April 3, 1939 (tree 22 m. high, diameter 48 cm.; crown not widespreading; bark 5 mm. thick, grey, fairly smooth; wood brown; flower buds yellow; fruits black).

The species is outstanding because of the glaucous and pubescent lower surface of the leaves and their loosely reticulate upper surface. The tawny-ferrugineous long pedunculate inflorescence is also a feature of note. The species falls into the same group with *B. Dielsiana* and *B. acutifolia* of Teschner from which it is separated by the reticulate rather than areolate venation. Floral differences also manifest themselves on further study.

Beilschmiedia Brassii, spec. nov.

Arbor 20 m. alta, ramulis glabris, irregulariter sulcatis cicatrisatis griseo-brunneis. Folia alternata, obovata, 7–16 cm. longa, 3.5–8 cm. lata, coriacea, rotundata vel retusa, basi plus minusve rotundata, saepe obliqua, utrinque glabra, supra nitida, pallida, rugosa fide coll., subtus minutissime lepidota interdum minute glandulosa, subinde fusco-villosa, penninervia, nervis 6–8 subtus quam supra elevationibus satis arcuatis, utrinque laxe reticulata, petiolis crassis 1–2 cm. longis griseo-brunneis glabris. Inflorescentia ignota. Infructescentia axillaris, subterminalis, crassa, ad 10 cm. longa, glabra, pedunculis sulcatis. Fructus flavescent, sectus lactescens fide coll., in sicco fuscus, papillosus, subglobosus, 15–17 mm. longus, 12–15 mm. latus, calyce deciduo reliquo subtentus, pedicello crasso 6–7 mm. longo, 3–4 mm. lato irregulariter sulcato glabro.

BRITISH NEW GUINEA: Central Division, Dieni, Ononge Road, *Brass 3930* (TYPE, AA), alt. 500 m., rain-forest, May 2, 1933 (tree 20 m., with dense crown and uneven brittle lenticellate pale brown bark; leaves pale, wrinkled, glossy above; fruit pale yellow, shining, almost globose, $\pm$ 2 cm. diam., exuding a milky sap when cut).

This species, with leaves which are pale shining above and minutely

scurfy with intermittent glands and an occasional black hair below, is unusual indeed. The almost globose pale yellow fruit is a distinguishing feature. It is with no hesitation that I describe it as new, even though no flowers are available.

Beilschmiedea bullata, spec. nov.

Arbor ad 33 m. alta, ramulis glabris tuberculatis, junioribus plus minusve sulcatis, brunneis. Folia alternata, elliptica, obovata, 12–17 cm. longa, 6–10 cm. lata, coriacea, bullata, rotundata vel subacuta, basi acuta, utrinque glabra, junioribus costa venisque lepidoti-pubescentibus, penninervia, nervis 8–10 subtus quam supra prominentius papillois brunneis satis arcuatis, utrinque minute alveolata, petiolis crassis 1–2.5 cm. longis 3–3.5 mm. latis, brunneis glabris papillois. Inflorescentiae ignotae. Infructescentia axillaris, subterminalis, paniculata, ad 12 cm. longa, minute adpresse pubescens plurifructigera. Fructus atro-virens fide coll., in sicco brunneus, glaber, subpapillatus, ellipsoideus, 2–4 cm. longus, 1.2–2.5 cm. latus, calyce deciduo reliquo subtentus, pedicello crasso 5–7 mm. longo 2–4 mm. lato minute adpresse pubescente.

NETHERLANDS NEW GUINEA: 6 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh 12528* (AA), alt. 1250 m., common tree of primary forest on a ridge, Feb. 17, 1939 (tree 33 m. high, diameter 82 cm.; crown not widespreading; bark 13 mm. thick, black, rough; wood red; fruits dark green); 4 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh 13112* (TYPE, AA), alt. 850 m., frequent tree of primary rain-forest in the flat plain, March 6, 1939 (tree 29 m. high, diameter 63 cm., the crown not widespreading; bark 14 mm. thick, grey, fairly rough; wood red-brown; fruits green); ? same locality and alt., *Brass & Versteegh 13693* (AA), frequent in somewhat swampy rain-forest of river plains, March 1939 (sparsely branched tree $\pm$ 20 m. high $\times$ 25 cm. diameter; branches myrmecophilous; fruit black).

A species outstanding because of the bullate leaves with prominent venation beneath, the branchlets and costa on the lower surface showing a distinctly papillate condition, and the minute appressed pubescence of the entire inflorescence. There can be hardly a doubt that the smaller-leaved no. 12528 is conspecific with the lush, large-leaved, large-fruited type from a rain-forest of lower altitude. Such a distinctive vegetative character as the occurrence of bullate leaves warrants the species being set up on fruiting material alone. *Brass 13693* has leaves less bullate than those of the type, with a tendency towards bullate leaves, however, on those areas where less pressure was apparently applied while drying. The infructescence is longer (nearly 17 cm.). Also, Brass notes this number as being myrmecophilous, whereas in the other two numbers cited there is no mention made of such a character. There is a tendency, as well, towards larger leaves (up to 20 cm. long $\times$ 16 cm. wide). In other respects no. 13693 is the same as the type.

(*To be concluded*)

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STUDIES IN THE LAURACEAE, IV PRELIMINARY STUDY OF THE PAPUASIAN SPECIES COLLECTED BY THE ARCHBOLD EXPEDITIONS

CAROLINE K. ALLEN

Concluded from page 131

Cryptocarya R. Br.

A word should be inserted at this point about the genus *Cryptocarya*. There are a few affinities of the Papuan species to be found in other islands of the Pacific, in Malaya, etc., but no near relatives. The majority of previously described species from New Guinea were described from flowering material only. It is possible to match the description of only one of these species with the New Guinean material at hand. Only by an examination of the types of Teschner can one be certain of the proper disposition of the material belonging in *Cryptocarya*. Much sterile material has been put aside until such time as it may be compared with the types. Many species have been set apart on fruiting or flowering material only. Oftentimes the fruit of this family is diseased, which fact has further hindered work in this genus. Care has been taken to limit new species only to those which have an outstanding feature or features which could not fail to have come to the attention of previous workers and hence have appeared in their descriptions.

Cryptocarya tetragona, spec. nov.

Arbor, ramulis crassis glabris lenticellatis striatis griseo-rubrescentibus, junioribus adpresse castaneo-pubescentibus, alte sulcatis tetragonis. Folia alternata, elliptica vel lanceolato-elliptica, ad 8–10.5 cm. longa, 2.5–4 cm. lata, coriacea, caudata, cauda $\pm$ 1 cm. longa, basi cuneata, supra glabra, subtus glauca, juniora minute adpresse aureo-brunnescentia triplinervia, nervis majoribus 3–5 mm. supra basim laminae divergentibus supra inconspicuis subtus elevatis, lateralibus 1–2 laminae supra medium, petiolis rubescentibus ad 13 mm. longis, glabris, junioribus griseo-pubescentibus. Inflorescentia axillaris, terminalis, racemoso-paniculata, crassa, brevis, ad 3 cm. longa (post anthesin), adpresse castaneo-pubescentia. Flores 2 mm. longi, extus pubescentes, $\pm$ sessiles. Fructus ater, asymmetricus, depressus,

irregulariter costatus, corollae reliquiis coronatus, 0.9 cm. longus, 1.2 cm. latus.

NORTHEASTERN NEW GUINEA: Morobe District, Ogeramnang, *Clemens* 5447 (TYPE, AA), alt. 1830 m., Feb. 19, 1937.

The species is very close to *C. cinnamomifolia* F. v. Muell. from Australia, the Australian species having shorter and broader leaves, more tapering toward the longer acumen with the broader portion below the middle, usually glabrous, less castaneous, and with more brownish pubescence when present, the laterals diverging up to 12 mm. from the base, larger flowers (3 mm.) and larger fruit ($\pm$ 12 mm.), subglobose, glaucous, and with the rough surface faintly costate. The branchlets are less coarsely striate, with lenticels not apparent, pale brown in color and glabrous.

***Cryptocarya argyrophylla*, spec. nov.**

Arbor, ramulis gracilis glabris teretibus striatis ad nodos leviter complanatis atro-brunnescentibus. Folia alterna, ovata vel ovato-elliptica, 5–8 cm. longa, 3.5–(4.5) lata, coriacea, anguste caudata, basi rotundata vel acuta, supra glabra, nitida, subtus glabrescentia, juniora supra leviter subtus dense argenteo-lepidoto-pubescentia, triplinervia, nervis prope basim laminae varie divergentibus, supra impressis, subtus elevatis, lateralibus 1–2, petiolis ad 1 cm. longis atro-brunnescentibus glabris vel glabrescentibus. Inflorescentia axillaris vel terminalis, laxe paniculata, ad 8 cm. longa, breviter brunneo-pubescentia. Flores $\pm$ 2 mm. longi, perianthii lobis punctatis. Fructus viridis fide coll., in sicco ater, inaequilateraliter ellipsoideus, apice basique abrupte angustatus, glaber, leviter costatus, 2.5 cm. longus, 1.2 cm. latus, saepe guttatus et papillosus.

NORTHEASTERN NEW GUINEA: Morobe District, Ogeramnang, *Clemens* 4739 (TYPE, AA), alt. 1830 m., Dec. 23, 1936; Yunzaing, *Clemens* 3566 (AA), alt. 1370 m., July 15, 1936 (forest tree 1.25 m., fruit green).

The smallish, shining, oval, triplinerved leaves, the blackish branchlets, and the widespreading brownish inflorescence make this species stand out from the rest of this group. Possibly *Clemens* 3566 does not belong with it, but, allowing for difference in stage of collection, it seems a fair match. The fruit seems to be unequal due to disease.

***Cryptocarya camptodroma*, spec. nov.**

Arbor parva, virgata, 3–4 m. alta, ramulis maculosis teretibus minute striatis glabrescentibus mox glabris lucidis, flavescenti-brunneis, junioribus fulvo-tomentosis. Folia alternata, oblongo-lanceolata, 10–14 cm. longa, 2.2–3.8 cm. lata, subcoriacea, longe abrupteque caudato-acuminata, basi obtusa vel cuneata, supra glabra nitida, juniora glabrescentia, subtus molli-ter sparse tomentosa, triplinervia, nervis supra basim laminae varie ad 5 mm. divergentibus, lateralibus supra medium 1–2, supra camptodromis impressis subtus elevatis, petiolis ad 1 cm. longis fulvo-tomentosis mox fusco-tomentosis. Inflorescentia ignota. Infructescentia axillaris, brevis, 1–2(?) cm. longa, tomentosa vel glabrescens? Fructus purpureo-ater fide coll., subglobosus vel ellipsoideus, glaber, costatus, late apiculatus, ad 2.2 cm. longus, 1.9 cm. latus, vel 3 cm. longus, 1.7 cm. latus.

BRITISH NEW GUINEA: Central Division, Dieni, Ononge Road, *Brass* 3802 (TYPE, NY), alt. 500 m., common, in dry type of rain-forest on ridge crests, April 20, 1933

(virgate small tree 3–4 m.; the leaves shining above, underneath yellow-green; nerves impressed; ripe fruit purple-black).

Although represented only by a fruiting specimen, placing it unquestionably in the genus *Cryptocarya*, this species is so very distinct and unlike any other known species as to warrant description. The long-caudate subcoriaceous leaves, yellow-green beneath, frequently constricted slightly below the tip, the tawny-tomentose young branchlets and underleaf surface and impressed nerves, and the camptodrome venation apparent above the middle of the leaf combine to make the species outstanding.

***Cryptocarya scalariformis*, spec. nov.**

Arbor parva ad 10 m. alta, ramulis glabris junioribus glabrescentibus minute striatis, junioribus leviter complanatis, pallide flavo-brunnescentibus. Folia alternata vel subopposita, oblonga, 12–18 cm. longa, 5.5–6 cm. lata, pergamentacea, caudato-acuminata, cauda ad 1 cm. longa, basi abrupte cuneata, utrinque glabra, triplinervia, nervis prope basim laminae divergentibus supra inconspicuis subtus elevatis petiolis rubescentibus ad 1.5 cm. longis glabris supra canaliculatis. Inflorescentia axillaris, racemosa(?), gracilis, summo pauciflora, ad 4.5 cm. longa, glabrescens. Flores magni, $\pm$ 6 mm. longi, gilvo-flavescentes, glabri, pedicellis ad 2 mm. longis. Fructus ignotus, ex descriptione 4 cm. longus, 3.4 cm. latus, melo-coloratus.

SOLOMON ISLANDS: Bougainville: Marmaromino, *Kajewski* 2204 (TYPE, AA), alt. 50 m., common in rain-forest, Sept. 30, 1930 (small tree up to 10 m. high; petals cream-yellow, base of buds brown; fruit apple-colored, only one on specimens, length 4 cm., diam. 3.4 cm.; the leaves are the subject of a native superstition that if pieces of the leaves are blown after a ceremony, they cause blindness, usually by an enemy of the person afflicted; common name: "Oo-pu").

The nearest relative is *Cryptocarya pauciflora* Lauterb. & K. Schum. (*Pseudocryptocarya pauciflora* [L. & S.] Teschner, in Engl. Bot. Jahrb. 58: 412. 1923) from Northeastern New Guinea. The latter, however, is a shrub 1–1.5 m. high, with leaves never more than 12 cm. long and a caudate tip of 2 cm. long, whereas *C. scalariformis* is a small tree up to 10 m. high, with leaves never less than 15 cm. long and caudate tip not more than 1 cm. long. The flowers also present differences on detailed examination. Another fairly close affinity is found in *C. cinnamomifolia* Merr. from the Philippines. The wider, somewhat heavier leaves with less evident parallel cross venation immediately separate the two. From Teschner's description and notes on his new genus, I see no reason for maintaining it as separate from *Cryptocarya*. Examination of the type, particularly of the fruit, may show further characters which will warrant a distinct genus.

***Cryptocarya exfoliata*, spec. nov.**

Arbor ad 15 m. alta, trunco alte ramulis leviter sulcatis, leviter et pallide fulvo-pubescentibus, junioribus dense fulvo-pubescentibus. Folia elliptica, 5–12 cm. longa, 2–5.5 cm. lata, chartacea, obtuse caudata vel breviter obtuse acuminata, basi cuneata, interdum obtusa, supra nitida, glabra, juniora pilosa, subtus pilosa, glauca fide coll., plerumque subtripplinervia, nervis lateralibus 3(–6), supra gracillimis, basi leviter elevatis apice evanidis subtus leviter elevatioribus, minute inconspicueque areolata, petio-

lis 6–8(–12) mm. longis, gracilibus supra sulcatis pubescentibus. Inflorescentia ignota. Infructescentia axillaris vel terminalis, ad 7 cm. longa racemoso-paniculata, leviter sulcata vel striata dense adpresse pubescens, ramulis aliquid geniculatis. Fructus ater, ellipsoideus vel subglobosus, glaber, minute papillosus, nitidus, apiculatus, ± 1 cm. longus, 0.8 cm. latus.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7655 (TYPE, AA), dry type rain-forest fringing lake, Sept. 1936 (tree 15 m. high; bark thin, grey, exfoliating in flaky scales; stem deeply flanged, the flanges extending to the branches and even the branchlets corrugate; underside of leaves glaucous; fruit smooth, black, ± 1 cm. diam.); Lower Fly River, east bank opposite Sturt Island, *Brass* 8175 (AA), rain-forest of inland dry ridges, Oct. 1936 (low canopy tree 10–12 m.; leaves glaucous underneath; fruit smooth, black).

The species is one of the few from New Guinea which falls into the triplinerviate group, although some individual leaves are penninerved. The leaves are of an unusual dark grey-green color on drying, which, with their glaucous lower surface, causes them to be distinguished immediately. The small shining ellipsoid to subglobose fruit, coupled with the somewhat geniculate closely appressed pubescent floral branchlets, also represent an unusual feature. The flanged trunk and branchlets occur in other species, but not in the triplinerved group. The Lower Fly River specimen bears leaves which are obscurely triplinerved. Close examination, however, shows leaves on the same branchlet exhibiting that condition.

Cryptocarya idenburgensis, spec. nov.

Arbor ad 29 m. alta, ramulis glabrescentibus teretibus striatis, atrobrunnescentibus, junioribus angulatis, griseis sparse pubescentibus. Folia alternata, lanceolato-elliptica vel elliptica, 8–15 cm. longa, 2.7–5 cm. lata, percoriacea, attenuate acuminata, basi subrotundata, saepe inaequalia, supra sparse minute glabrescentia, subtus minute dense adpresse griseo-pubescentia, ut videtur glauca, triplinervia, nervis prope basim laminae varie divergentibus, lateralibus 2 supra medium, supra impressis subtus elevatis, petiolis crassis ad 2 cm. longis sparse minute griseo-pubescentibus canaliculatis. Inflorescentia immatura, axillaris vel terminalis, ad 6 cm. longa, densiflora, patenti-paniculata, dense adpresse sericeo-ferrugineo-pubescentia. Flores magni ± 4 mm. longi, extus pubescentes, perianthii tubo intus pubescente. Fructus ignotus.

NETHERLANDS NEW GUINEA: 15 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh* 11912 (TYPE, AA), alt. 1740 m., occasional on the slopes in rain-forest, Jan. 11, 1939 (tree 29 m. high, diameter 47 cm.; crown not widespreading; bark 8 mm. thick, brown, fairly smooth; wood brown; flowers brown, not yet open).

A striking species because of the very coriaceous triplinerviate leaves, which are glaucous beneath, and the bright ferrugineous-pubescent dense-flowered inflorescence. The nearest species is *C. tetragona*, which is represented by a specimen in a later stage of development. In the latter there is apparently, as far as can be judged from the post-anthesis inflorescence, the same ferrugineous pubescence. Generally speaking, the leaves of the latter are of the same type, but differ in size, shape, pubescence and the length of petiole, those of *C. idenburgensis* being up to 15 cm. long, usually lanceolate-elliptic with long attenuate-acuminate tips, densely appressed greyish pubescent beneath, and petioles up to 2 cm. long. Possibly inter-

mediate specimens may eventually be collected that will make it expedient to include the two in a single species.

***Cryptocarya globosa*, spec. nov.**

Arbor ad 20 m. alta, ramulis breviter ferrugineo-tomentosis mox glabris teretibus. Folia alternata, oblonga, 17–26 cm. longa, 7–8 cm. lata, chartacea, breviter apiculata vel leviter apiculato-acuminata, basi acuta inaequalia, utrinque costa glabrescente excepta glabra, in sicco subtus rube-scente, minute glanduloso-punctata, penninervia, nervis 10–12 supra impressis subtus elevatis, costa subtus pallide brunnea fide coll., reticulata, petiolis aliquid crassis, ad 1.5 cm. longis, breviter adpresse ferrugineo-tomentosis mox glabris. Inflorescentia ignota. Infructescentia axillaris, aliquando ramosa crassa, brevis ad 6 cm. longa, utrinque glabra. Fructus ater, glaber, laevis, in sicco leviter brunneo-guttatus, saepe rimosus, globosus, saepe basi abrupte attenuatus (subturbatus), obtuse apiculatus, 3.4×3 cm. fide coll., $\pm$ sessilis.

SOLOMON ISLANDS: Bougainville: Kugumaru, Buin, *Kajewski 1784* (TYPE, AA), alt. 150 m., common in rain-forest, May 28, 1930 (medium-sized tree up to 20 m. high; midrib light brown beneath; fruit black when ripe, in length 3.4 cm., in diameter 3 cm., with small protuberance at end; common name: "Tin-dinni").

Another species so distinctive that, although only fruiting material is available, a description is inevitable. The typical fruit places it without question in *Cryptocarya*, despite the presence of thin chartaceous leaves unusual for the genus. From the description of *C. depressa* Warb., one might be inclined to claim relationship here for the new species. Warburg 20574 from the Bismarck Archipelago, presumably the type of the former, is at variance with Warburg's description. The leaves are less than 15×5 –6 cm., and are pubescent below, whereas Warburg notes leaves 18 – 22×7 –10 cm. and glabrous. Warburg states in his description that underneath the tree he found flowers of a *Cylicodaphne* but was not sure that they belonged to his specimen. The fruit of no. 20574 is obviously of a *Cryptocarya*. K. Schumann & Lauterbach (Fl. Deutsch. Schutzgeb. Südsee 333. 1901) remark, in connection with *C. depressa*, that many specimens of bark and leaves of *Massoia* come in, (an aromatic lauraceous plant which is probably a species of *Cinnamomum* and which Schewe l.c. has placed under *Cinnamomum*), but no flowers or fruit. Apparently the authors feel that there is perhaps some connection here with Warburg's species. *Cryptocarya globosa* is in all probability aromatic also, if one may judge by the presence of countless minute punctate glands that are visible on the leaves under a lens. It is impossible to clear up the situation without access to the specimen from which Warburg drew his inadequate diagnosis. Meanwhile *C. globosa* is mentioned as a possible relative.

***Cryptocarya Brassii*, spec. nov.**

Arbor 12–14 m. alta, cortice brunneo in squamis parvis mollibus exfoliato, fide coll., ramulis minute pubescentibus mox glabrescentibus, griseo-brunnescentibus. Folia alternata, oblonga, ad 26 cm. longa, ad 10 cm. lata, coriacea, apice basique breviter obtuse acuminata, supra glabra, nitida, subtus sparse pilosa, penninervia, nervis ± 17 , supra impressis subtus elevatis

minute pubescentibus, costa supra impressa subtus crassa elevata minute pubescente mox glabrescente, crasse conspicueque reticulata, petiolis crassis ad 2 cm. longis, 3 mm. latis rugosis glabrescentibus. Inflorescentia ignota. Infructescentia terminalis, late-paniculata, crassa, ad 15 cm. longa lataque, ramulis utrinque pubescentibus subangulatis. Fructus ater, apice basique pallide minute pubescens, paullo turbinatus, apiculatus, obscure costatus, ad 1.5 cm. longus, ad 8 mm. latus, $\pm$ sessiles.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7516 (TYPE, AA), common in rain-forest substage, Aug. 1936 (tree 12–14 m. high; bark close, brown, exfoliating in small soft scales; fruit black); possibly also *Brass* 7499 (AA), same locality, common tree in rain-forest canopy layer, Aug. 1936 (leaves stiff, the underside brown pubescent; fruit black $\pm$ 1 cm. long); Koitaki, *Carr* 12693 (NY), alt. 450 m., forest, June 25, 1935 (tree 15 m. tall; buds brown); same locality, *Carr* 12740 (NY), June 27, 1935 (leaves brown hairy beneath; young fruit green).

It is probable that the Carr specimens in flower and young fruit may represent early stages of *C. Brassii*. The two Brass collections cited I feel strongly to be the same, but they are in different stages of development and growing under slightly different conditions. More complete material will aid in solving the difficulty.

***Cryptocarya cordata*, spec. nov.**

Arbor magna, ramulis dense pallide ferrugineo-tomentosis obscure striatis. Folia subopposita oblonga, 8.5–31 cm. longa, 2.5–10 cm. lata, subcoriacea, longe mucronata, basi cordata, supra costa pubescente excepta glabra, nitida fide coll., subtus molliter pubescentia, penninervia, nervis 10–20, supra impressis subtus elevatis pallide ferrugineo-tomentosis ad marginem divergentibus, costa supra pubescente subtus elevata pallide ferrugineo-tomentosa, venis transversis parallelis, minute reticulata, petiolis crassis ad 0.5 cm. longis dense pallide ferrugineo-tomentosis. Inflorescentia ignota. Infructescentia axillaris, paniculata, crassa, ad 8 cm. longa, utrinque breviter pallide ferrugineo-tomentosa. Fructus ater, glaber, paullo turbinatus, obtuse apiculatus, ut videtur costatus, ad 1.7×0.9 cm., $\pm$ sessiles.

NEW BRITAIN: Gazelle Peninsula, Nodup area, *Waterhouse* 324, *Yale Ser. No.* 28621, (TYPE, NY), Sept.-Oct. 1934 (large tree; leaf glossy, underside "soft"; fruit black, about size of currant, used as a relish with certain foods; Teop. name: "nubiri"; "Tukura").

SOLOMON ISLANDS: Bougainville: Marmaromino, *Kajewski* 2213 (AA), alt. 50 m., common in rain-forest, Sept. 30, 1930 (medium-sized tree up to 20 meters high, the young stems covered with short brown hair; leaves with prominent brown veins underneath; fruit black, in length 8 mm.; the leaves are heated and applied to sore eyes by natives; common name: "Tembu").

The species appears to be most closely related to the New Guinean species *C. multipaniculata* Teschner, from Kaiser-Wilhelmsland at an altitude of 600 m. The latter species, however, is noted as a small, myrmecophilous tree with acute or shortly acuminate leaves up to 19 cm. long, in which the lateral nerves are confluent near the margin. *Cryptocarya cordata* is a large tree with long-mucronate leaves up to 31 cm. long, in which the lateral nerves go to the very margin. The specimen cited from the Solomon Islands belongs here probably, although the majority of the leaves are broadly elliptic and much shorter than those of the type. At

most, the differences might be the means of designating a variety from that locality. Although there is only a single fruiting specimen represented, the tree is distinctive enough to warrant description.

***Cryptocarya umbonata*, spec. nov.**

Arbor parva ad 15 m. alta, ramulis gracilibus glabris striatis rubescentibus. Folia alternata, lanceolata, 8–13 cm. longa, 2–3.5 cm. lata, chartacea, attenuato-acuta vel acuminata; basi acuta, utrinque glabra, penninervia, nervis 6–9, supra quam subtus obscurioribus, utrinque reticulata, petiolis gracilibus 7–8 mm. longis, glabris rubescentibus. Inflorescentia ignota. Infructescentia axillaris(?), crassa, ad 3–4 cm. longa, glabra. Fructus ater, depresso-globosus, glaber, apice umbonatus, corollae reliquiis coronatus, 2.5 cm. longus, ad 3 cm. latus, pedicello incrassato glabro dense brunnescenti-lenticellato.

SOLOMON ISLANDS: Bougainville: Kupei Gold Field, *Kajewski 1695* (TYPE, AA), alt. 1000 m., common in rain-forest, April 12, 1930 (small tree up to 15 m. high; fruit length 2.5 cm., diameter 3 cm., much more broad than long, full grown on specimens, red when cut).

Few species of the genus have lanceolate, thin, papery leaves with fruit that is broader than long and borne on short branchlets. The umbonate tip of the fruit is an unusual feature as well. The flowers of the species should prove interesting to keep pace with the other characters. This is the first instance where the collector has mentioned that the inside flesh of the fruit is red when cut. The fact that the fruiting pedicel is enlarged is normal for the family but the superabundance of what appear to be numerous brownish lenticels completely obscuring the natural color of the branchlets might indicate disease of this part. There seems scarcely any doubt of the genus, certainly not of the family.

***Cryptocarya brevipes*, spec. nov.**

Arbor, ramulis tomentosis mox glabrescentibus, striatis. Folia elliptica vel ovata, raro inaequalia, ad 15 cm. longa, 6–7.5 cm. lata, coriacea, caudato-acuminata vel leviter acuminata, basi rotundata vel acuta, supra glabra subtus pilosa, minute glanduloso-punctata, penninervia, nervis 9–12 supra impressis leviter pubescentibus subtus elevatis dense ferrugineo-tomentosis, venulis sparsis, non reticulata, petiolis crassiusculis ad 1.1 cm. longis, tomentosis. Inflorescentia immatura, ferrugineo-tomentosa. Infructescentia axillaris, brevissima, crassa, ut videtur fructu singulo maturante, 0.7–2.5 cm. longa ferrugineo-tomentosa. Fructus rubescens subglobosus, glabrescens, mox glaber apice basique longe ferrugineo-pubescentibus, circiter 1.3 cm. diam., apice basique apiculatus, pedunculo $\pm$ 2 mm. longo crasso tomentoso.

NORTHEASTERN NEW GUINEA: Morobe District, Yunzaing, *Clemens 3451* (TYPE, AA), alt. 1825 m., June 29, 1936; Ogeramnang, *Clemens 5424* (AA), alt. 1830 m., forest hill, Feb. 17, 1937 (tall tree, dbh. 0.30–0.90 m., buds green).

The species is based on material so fragmentary that at first glance it seems useless to attempt a description. The unusually short infructescence, single-fruited at maturity, though showing that one or two other lateral fruits have fallen off earlier in the development of the fruiting branchlet, is an unusual character. The roundish fruit, fairly sharp-pointed at both

ends, with tufts of long rusty hairs, is also unique. Unfortunately, all except two leaves are cut off or broken at the tips, but the two remaining are very different and probably cover the range of variation that might be apparent in the others. No field notes accompany the specimens other than those given under the citation.

***Cryptocarya palmerensis*, spec. nov.**

Arbor procera gracilis, ramulis glabris striatis lenticellatis, atro-rubescens. Folia ovata vel elliptica, 7.5–12 cm. longa, 3–5.5 cm. lata, coriacea, obtusa vel obtuse acuminata, falcata, basi rotundata vel acuta, supra glabra, subtus glauca fide coll., penninervia, nervis 3–4 supra impressis subtus elevatis atro-rubescens leviter glabrescentibus, subconspicue reticulata, petiolis gracilibus ad 2 cm. longis glabris atro-rubescens, junioribus supra minute papillosis. Inflorescentia axillaris gracilis laxa paniculata, ad 5 cm. longa pallide adpresse ferrugineo-pubescentis, pauciflora, pedunculis ad 5 mm. longis. Flores ultimi 2–3, ad 2–3 mm. longi, extus intusque pubescentes, staminibus et staminodiis pubescentibus. Infructescentia axillaris, paniculata, ad 12 cm. longa, utrinque glabra, ramulis nitidis geniculatis. Fructus ater, glaucus, ellipsoideus, apice basique attenuatus, 2.5 cm. longus, 1.5 cm. latus, apice floris reliquiis coronatus, pedunculo breve.

BRITISH NEW GUINEA: Palmer River, 2 miles below junction of Black River, *Brass* 6868 (TYPE, fruit AA), alt. 100 m., riverine forest canopy, June 1936 (tall slender tree with spurred base, brown lenticellate bark, and brown wood; leaves glaucous below; immature fruit glaucous); 4 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh* 13127 (AA), alt. 850 m., frequent tree of primary rain-forest in the flat plain, March 9, 1939 (tree 29 m. high; diameter 54 cm.; crown not widespreading; bark 8 mm. thick, grey; wood orange-red; fruit green).

Under *Cryptocarya palmerensis* may be placed the following: Eil. Bak. Soroëi, Netherlands Indies Forest Service *bb* 30925 (fl., AA), alt. 50 m., Sept. 28, 1939; 30915, 30918.

The localities of the two Brass specimens cited are separated by high mountain ranges and the altitudes differ by 750 meters. With so many points in common, however, it must become evident that there is close affinity between them. It remains to be seen whether or not an abundance of material will reveal a series of intergrading specimens, localities and altitudes which will justify two entities being considered as belonging to the same species.

***Cryptocarya sulcata*, spec. nov.**

Arbor, ramulis glabris sulcatis dense lenticellatis, griseis vel rubescentibus. Folia oblonga, 9.5–16 cm. longa, 5–8 cm. lata, coriacea, apice basique rotundata, vel retusa basi abrupte acuminata, margine revoluta, leviter undulata, utrinque glabra nitida? penninervia, nervis 9–12, supra impressis, subtus elevatis, costa leviter papillosa, pallide rubescente, venulis transversis supra inconspicuis subparallelis, subtus reticulata, petiolis crassis ad 2 cm. longis ad 4 mm. diam., nigrescentibus glabris, adultioribus lenticellatis. Inflorescentia axillaris et terminalis paniculata, ad 12 cm. longa, multiflora, minute dense puberula, pedunculis ad 4 cm. longis glabrescentibus sulcatis minute papillosis, ramulis striatis ad nodos leviter complanatis. Flores circiter 3 mm. longi, extus pubescentes, brevipedicellati. Fructus

(no. 1769) immaturus?, viridis fide coll., in sicco atro-rubescens, ellipsoideus, glaber, leviter maculatus, apice floris reliquiis coronatus, basi attenuatus.

NORTHEASTERN NEW GUINEA: Morobe District, Sattelberg, *Clemens* 3450 (TYPE, AA), alt. 1525 m., June 29, 1936; Ogeramnang, *Clemens* 4827 (AA), alt. 1795 m., Jan. 1, 1937; Yunzaing, *Clemens* 3435 (AA), alt. 1525 m., June 26, 1936; Wareo, *Clemens* 1769 (AA), alt. 750 m., high forest, Feb. 4, 1936 (tree dbh. 26 cm.; leaves pale below; flower dull yellow; fruit 1-seeded, green).

Many species from New Guinea have more or less sulcate branchlets, but those of these species are sulcate to a greater degree than most. This, with the numerous prominent lenticels, indicates a new species. There can be no doubt that the first three numbers are conspecific. The fruit, apparently, is diseased, although it is possible to note that it is ellipsoid, and maculose in the manner of *C. Mackinnoniana* F. v. Muell. or *C. Whiteana* Allen. Vegetatively it has some points of resemblance with *C. Brassii* Allen. The presence of numerous lenticels shows a similarity to *C. verrucosa* Teschner but it lacks the acuminate leaves, lanuginose below, among other differences. *Clemens* 1769 is in a younger stage, but there is present the same sulcate and lenticellate condition of the branchlets. The leaves are perhaps less coriaceous, with a more definite apex and thirteen pairs of lateral nerves. The inflorescence is shorter but similar to the more developed inflorescences of the other numbers. The fruit is borne on much thickened pedicels, striate and verrucose, the fruiting branchlets are sulcate, becoming striate toward the tips. The apex of the fruit has a prominent crown about 2 mm. across, consisting of the remains of the flower.

***Cryptocarya pergamentacea*, spec. nov.**

Arbor 15 m. alta, ramulis gracilibus glabris nitidis striatis ad nodos leviter complanatis rubescentibus. Folia alternata, lanceolata vel lanceolato-elliptica, 9–12.5 cm. longa, 2.5–6 cm. lata, pergamentacea, longe caudato-acuminata, saepe falcata, cauda 1–1.8 cm. longa, basi acuta vel leviter attenuata, utrinque glabra, in sicco subtus pallida, penninervia, nervis pubescentibus pallidis, fide coll., 5–6 in axillis superioribus domatiis parvis insignitis in sicco supra obscuris subtus elevatis rubescentibus, subtus quam supra conspicuius minute reticulata, petiolis gracilibus, ad 1.5 cm. longis glabris rubescentibus. Inflorescentia terminalis et axillaris, laxè paniculata, gracilis ad 12 cm. longa, multiflora, glabra, summa glabrescente, pedunculis longis. Flores $\pm$ 2.3 mm. longi, gilvi fide coll., perianthii lobis extus pubescentibus, brevipedicellatis vel sessilibus. Fructus ignotus.

BRITISH NEW GUINEA: Lower Fly River, east bank opposite Sturt Island, *Brass* 8012 (TYPE, AA), substage tree in flood plain rain-forest, Oct. 1936 (tree 15 m. high; leaf nerves pale; flowers cream-coloured).

The species is unique because of the parchment-like, often falcate, drip-tip leaves. The presence of domatia or glands in the axils of the lower pairs of lateral nerves on the lower surface of the leaves is unusual for the genus. The glands are not visible from the upper surface of the dried specimens but show up below due to the small tuft of hairs sprouting from the axils. *Cryptocarya foveolata* White & Francis from Australia has glands, but in this species the leaves are three-nerved and the glands are very prominent

above and below, as in the widespread *Cinnamomum Camphora* (L.) Nees & Eberm. from the Orient. The long, graceful, rather spreading, many-flowered inflorescence is also a distinguishing feature of *C. pergamentacea*.

***Cryptocarya subfalcata*, spec. nov.**

Arbor parva, ramulis gracilibus glabris striatis teretibus griseis, junioribus rubescentibus. Folia elliptica vel lanceolato-elliptica, 6–12 cm., raro 13 cm. longa, 2–3.5 cm., raro 4.5 cm. lata, chartacea, apice caudata, cauda $\pm$ 1 cm. longa, subfalcata basi obtusa, utrinque glabra, penninervia, nervis 4–5 supra obscuris subtus elevatis, costa supra impressa subtus elevata, utrinque reticulata, petiolis gracilibus 5–7 cm. longis glabris canaliculatis. Inflorescentia axillaris, paniculata, gracilis, ad 3 cm. longa, glabrescens. Flores parvi, 1.6 mm. longi, ochracei fide coll., extus glabrescentes pedicellis brevibus pubescentibus. Fructus immaturus(?).

NORTHEASTERN NEW GUINEA: Morobe District, Yunzaing, *Clemens* 3907 (TYPE, AA), alt. 1370 m., forest hills, Aug. 18, 1936 (small tree, dbh. 7.5–10 cm.; flower khaki-yellow); *Clemens* 3772 (AA), alt. 1370 m., forest trail, Aug. 6, 1936 (tree height variable, dbh. 10 cm. to big tree; fruit green to very dark).

The slender, greyish, terete branchlets, the small glabrous leaves, and the slender short inflorescence with small flowers mark this species as differing from all others. The fruit of the type specimen is small (5 mm. diam.) and subglobular. It is probably in very young stage, and appears to have been attacked by insects or in some way diseased. *Number* 3772 shows obconic fruit, 8 mm. long, 10 mm. wide. The structure, as well as the texture of these fruits, appears abnormal even in the dried state. Although the leaves are slightly longer on the whole than those of the type specimen, they are probably conspecific.

***Cryptocarya aureobrunnea*, spec. nov.**

Arbor parva, ramulis glabrescentibus plus minusve glandulosis, junioribus pubescentibus, teretibus, striatis brunnescentibus. Folia elliptica, 6.5–14 cm. longa, 4.5–7.5 cm. lata, subcoriacea, rotundata vel leviter obtuse acuminata, basi subrotundata vel obtusa, supra glabra, subtus glabrescentia deinde glabra, penninervia, nervis 5–7 supra inconspicuis subtus elevatis, costa supra impressa plus minusve papillosa, subtus elevata, subtus graciliter reticulata, petiolis 1–1.2 cm. longis, glabrescentibus, papillosis brunnescentibus. Inflorescentia axillaris, pluripaniculata, plerumque ramosa, ad 15 cm. longa, adpresse aureo-brunneo-subsericeo-pubescentis, ramulis papillosis, angulatis. Flores minute ferrugineo-pubescentes, ad 2.5 mm. longi. Fructus ignotus.

NETHERLANDS NEW GUINEA: Bernhard Camp, Idenburg River, *Brass* 14072 (TYPE, AA), alt. 50 m., flooded rain-forest of river plains, April 1939 (tree 15 m. high).

The numerous, slender, many-panicked, golden brown axillary inflorescences, almost silky appressed pubescent with minute flowers, is sufficient grounds for denoting this species as new. The glandular condition prominent on the branchlets of the inflorescence and less so on the stems proper is another mark of distinction. Near this, or perhaps even belonging to it, are the following *Clemens* numbers, the branchlets of which apparently have been attacked by a fungus: NORTHEASTERN NEW GUINEA: Morobe District, Sattelberg, *Clemens* 1824 (AA), alt. 990 m., hill forest, Feb. 13, 1936 (small

tree, dbh. 10–15 cm.; leaves pale beneath; flower buds golden brown); same locality, *Clemens 1887* (AA), Feb. 19, 1936.

Cryptocarya Whiteana, spec. nov.

Arbor 15 m. alta, ramulis griseo-fuscis glabrescentibus, junioribus dense ferrugineo-tomentosis. Folia alternata, oblonga vel elliptica, juniora subrotundata, 3–10 cm. longa, 2–4.5 cm. lata, per coriacea, subbullata, rotundata vel retusa, basi obtusa rotundata vel subauriculata, margine saepe revoluta, supra costa nervisque exceptis glabra, junioribus utrinque pubescentibus, nitida, subtus subglauca, pubescentia, penninervia, nervis 5–9 utrinque ferrugineo- vel pallide ferrugineo-tomentosis supra impressis subtus elevatis venis transversis parallelis utrinque conspicuis, supra inconspicue minuteque areolata, petiolis crassis ad 1 cm. longis dense ferrugineo-tomentosis mox fusco-glabrescentibus. Inflorescentia ignota. Infructescentia axillaris, paniculata, crassa, ad 10 cm. longa, fusco-glabrescens. Fructus purpurascens, in sicco albo-guttatus, glaber, late ellipticus, late apiculatus, scaber, 2×1.5 cm., $\pm$ sessilis.

BRITISH NEW GUINEA: Central Division, Mt. Tafa, *Brass 5003* (TYPE, NY), alt. 2400 m., common in damp valley forests, Sept. 11, 1933 (tree 15 m. or more high, with dense irregular crown of very stiff concave leaves and an abundance of hard purplish fruit; flowers not seen).

In determining this number in 1936, Mr. C. T. White, Government Botanist of Queensland, made the following note: "This is very like *C. Mackinnoniana* of North Queensland, but the Papuan species has a much broader fruit and is probably another, but closely allied, species." His comment on the fruit is correct and other differences in pubescence and leaf characters are evident as well. It is a pleasure to name it in honor of Mr. White, who has done much to further our knowledge of Australasian and Papuan flora.

Cryptocarya Archboldiana, spec. nov.

Arbor 25 m. alta, ramulis glabris sulcato-angulatis ad nodos leviter complanatis atro-rubrescentibus. Folia alternata, ovata vel ovato-elliptica, 6.5–11 cm. longa, 3–5.5 cm. lata, coriacea, breviter caudato-acuminata basi rotundata, obtusa vel raro acuta, supra glabra, subtus minute sparse breviter pubescentia, penninervia, nervis 3, raro 4, supra inconspicuis subtus elevatis, petiolis gracilioribus, 1–1.5 cm. longis, glabrescentibus atro-rubrescentibus, plus minusve papillosis. Inflorescentia terminalis et axillaris, erecte paniculata, ad 8 cm. longa, pubescens, infima glabra, pedunculis ad 3 cm. longis, plus minusve papillosis. Flores ad 3.3 mm. longi, flavi fide coll., perianthii lobis extus intusque pubescentibus brevipedicellatis. Fructus viridis, fide coll., glaber, ellipsoideus, obscure costatus vel rugosus, obscure papillosus.

NETHERLANDS NEW GUINEA: 4 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh 14110* (TYPE, AA), alt. 75 m., on lower mountain slopes of primary rain-forest, May 3, 1939 (tree 25 m. high, diameter 43 cm.; crown not widespreading; bark 10 mm. thick, brown; wood brown; flowers yellow); same locality, *Brass & Versteegh 13119*, (AA), alt. 850 m., occasional tree of primary rain-forest in the flat plain, March 7, 1939 (tree 25 m. high, diameter 46 cm.; crown not widespreading; bark 6 mm. thick, black; wood brown; fruits green).

The last-mentioned specimen is from a branch in a younger stage of de-

velopment, bearing mature fruits, which apparently are left from the crop of the previous season. The lower leaves are more coriaceous, while the new growth, continuing through last year's inflorescence, shows young leaves in the process of unfolding. Despite the difference in age of the two branchlets, it is apparent that the specimens are conspecific. One of the most distinct features is the sturdy terminal inflorescence with papillose surface and angled or even sulcate branchlets. The sericeous, silvery or golden, appressed pubescence on the lower surface of the young leaves has rarely been noted in the genus.

***Cryptocarya bernhardiensis*, spec. nov.**

Arbor 10–12 m. alta, ramulis gracilibus glabris, junioribus pubescentibus, griseis. Folia elliptica, raro elliptico-ovata, 6–8.5–10 cm. longa, 2–4 cm. lata, chartacea, caudata, cauda $\pm$ 1 cm. longa, basi subrotundata vel obtusa, matura supra glabra, juniora pilosa, subtus glauca, longe pubescentia, penninervia, nervis 4–6, supra obscuris impressis plus minusve pubescentibus subtus elevatis pallide brunnescentibus, subtus reticulata, petiolis gracilibus ad 8 mm. longis minute denseque pubescentibus. Inflorescentia ignota. Infructescentia axillaris, gracilis, ad 4 cm. longa, pubescens. Fructus ater, subglobosus, ut videtur bipartitus, glaber, minute papillosus, apice corollae cicatrice coronatus, 1 cm. longus, 1.5 cm. latus.

NETHERLANDS NEW GUINEA: 6 km. sw. of Bernhard Camp, Idenburg River, *Brass 12968* (TYPE, AA), alt. 1200 m., rain-forest substage tree, Feb. 1939 (tree 10 m. high; underside of leaves glaucous; fruit black); 4 km. sw. of Bernhard Camp, Idenburg River, *Brass 13467* (AA), alt. 850 m., rain-forest of river plains, March 1939 (slender substage tree 12 m. high).

The species is unusual for its fruit, which is wider than long, obscurely channeled along its longitudinal circumference, giving the appearance of a bipartite condition. This type of fruit is found in *Cryptocarya corrugata* White & Francis from Queensland, but resemblance to that species ends there.

***Cryptocarya Kajewskii*, spec. nov.**

Arbor ad 25 m. alta, ramulis glabris, junioribus minute pubescentibus, striatis lenticellatis, atro-rubrescentibus. Folia alternata, ovata vel ovato-elliptica, saepe obliqua, 6–9 cm. longa, 2–4.5 cm. lata, subcoriacea, acuta vel attenuate acuta, minute mucronulata, basi rotundata vel abrupte acuminata, saepe inaequalia, raro acuta, supra glabra, nitida, in sicco rubro-brunnescentia, subtus minute sparse pilosa, argentea, fide coll., penninervia, nervis 3–4(–5) supra impressis inconspicuis subtus elevatis, utrinque reticulata, petiolis gracilibus, ad 1 cm. longis minute pubescentibus. Inflorescentia immatura, terminalis et axillaris, paniculata, ad 4 cm. longa, minute adpresse pubescens. Flores $\pm$ 2 mm. longi, perianthii lobis crassis, extus pubescentibus. Fructus ignotus.

SOLOMON ISLANDS: Bougainville: Kupei Gold Field, *Kajewski 1676* (TYPE, AA), alt. 950 m., common in rain-forest, April 10, 1930 (medium- to large-sized tree up to 25 m. high; leaves silvery beneath, the young leaves pink-green; flowers buds only on specimen).

This is a very striking species because of the dark reddish brown ovate leaves. It resembles no known Papuan species, but certainly belongs to

Cryptocarya. There is no suggestion of a silvery or glaucous under-leaf surface on the dried specimen. On the branchlets of the immature inflorescences an approach to a papillate condition is noticeable.

Cryptocarya Ledermannii Teschner in Engl. Bot. Jahrb. **58**: 408. 1932.

NETHERLANDS NEW GUINEA: 18 km. sw. of Bernhard Camp, Idenburg River, *Brass* 12677 (AA), alt. 2150 m., frequent in substage layer of mossy forest, Feb. 1939 (tree attaining 10 m.; underside of leaves glaucous; flowers green; fruit unripe); same locality, *Brass & Versteegh* 12530 (AA), alt. 1230 m., occasional tree on slope of ridge of primary forest, Feb. 17, 1939 (tree 28 m. high, diameter 53 cm.; crown not wide-spreading; bark 12 mm. thick, black, fairly rough; wood brown; fruits red-brown).

Brass 12677 shows young leaves densely woolly ferrugineous-tomentose on both surfaces. The rusty color of the pubescence apparently becomes dark fuscous as the season advances, for older leaves and branchlets have no trace of brightness. Indeed, the tomentum itself wears off as the branchlets lengthen. The young inflorescence is also densely woolly ferrugineous-tomentose and the flowers are noted as green, as opposed to the yellow of Teschner's description. On this specimen is a single fruit which *Brass* indicates as unripe. Number 12530 is an older branchlet, with longer internodes and slightly larger leaves, and is less tomentose throughout. No glaucous condition of the leaves is noted, but that, if present on younger leaves, may be evanescent with age. The few fruits left on the branchlets are apparently immature, even though the collectors have stated that they are red-brown.

Cryptocarya perlucida, spec. nov.

Arbor, ramulis rigidis glabris, junioribus rigide atro-pubescentibus, atro-rubrescentibus. Folia elliptica vel elliptico-ovata, ad 7 cm. longa, 2–3 cm. lata, coriacea, caudato-acuminata, cauda $\pm$ 1 cm. longa, basi acuta leviter subaequalia, utrinque glabra, in sicco castanea, supra lucida, penninervia, nervis 4–5 supra impressis subtus elevatis, subtus obscure reticulata, petiolis ad 1 cm. longis atro-rubrescentibus, glabris vel glabrescentibus. Inflorescentia axillaris et subterminalis, paniculata, ad 5 cm. longa, fulvo-pubescentis. Flores 2–3 mm. longi, ochracei, fide coll., extus pubescentes $\pm$ sessiles. Fructus immaturus (?).

NORTHEASTERN NEW GUINEA: Morobe District, Yunzaing, *Clemens* 4076 (TYPE, AA), alt. 1525 m., forest hill, Sept. 3, 1936 (tree 0.3–5.5 m. diam.; flower dull khaki; fruit dark olive); Yoangen-Yunzaing, *Clemens* 3351 (AA), alt. 1220–1525 m., June 18, 1936; Ogeramnang, *Clemens* 5397 (AA), alt. 1830 m., Feb. 15, 1937.

Numbers 3351 and 5397 have leaves slightly larger (9 cm. long) than those of the type, and somewhat glaucous below. The branchlets of 5397 seem slightly less coarse and lack the remnants of the spreading black pubescence found on the type; also the leaves appear to be less shining. The fruit of the type is either immature or diseased. The combination of castaneous glabrous caudate leaves, fulvous inflorescence, and stiff reddish black branchlets set this species apart from the others. It seems to be most closely related to *C. Schlechteri* Teschner from Kaiser-Wilhelmsland, but may be distinguished by narrower caudate acuminate leaves, and minutely pubescent panicles.

Cryptocarya minutifolia, spec. nov.

Arbor 14–16 m. alta, ramulis glabris, junioribus minute verrucosis, fusco-brunneis. Folia alternata, late elliptica vel subrotundata, ad 2 cm. longa, 1.4 cm. lata, coriacea, rigida, rotundata, saepe retusa, basi acuta vel attenuate acuta, utrinque glabra, supra nitida, subtus glauca, fide coll., margine revoluta, penninervia, nervis 3–4 supra inconspicuis subtus elevatis costa supra impressa subtus elevata, supra levis subtus minute reticulata, petiolis ad 4 mm. longis gracilibus nigrescentibus glabris. Inflorescentia ignota. Infructescentia, ut videtur, terminalis, erecte paniculata, crassa, ad 6(–8) cm. longa, utrinque glabra, pedunculis nigrescentibus minute verrucosis. Fructus ater, glaber, nitidus, subglobosus vel subturbinatus, apiculatus, rugosus et subcostatus fide coll., ad 1.4 cm. diam. $\pm$ sessilis.

BRITISH NEW GUINEA: Central Division, Murray Pass, Wharton Range, *Brass* 4741 (TYPE, NY), alt. 2840 m., one of the principal species in range top forests, Aug. 7, 1933 (large clear-trunked wide-crowned tree 14–16 m. tall; leaves stiff; upperside shining; lower glaucous; margins recurved; fruit shining black, wrinkled and somewhat costate, 1.2–1.4 cm. diam.).

Although only a single specimen is available, and that in fruit, there can be no doubt of its status as a new species. Nowhere in the genus are found such small leaves. The costate fruit crowned with the remains of the floral parts place it unquestionably in *Cryptocarya*. The length of the inflorescence and its position are difficult to determine in the fruiting specimen because many times the leaves fall as the infructescence develops, making the panicle appear terminal.

Endiandra R. Br.

Endiandra grandifolia Teschner in Engl. Bot Jahrb. **58**: 417. 1923.

NORTHEASTERN NEW GUINEA: Morobe District, Quembung Mission, *Clemens* 2110 (AA), alt. 600 m., margin forest mission house, March 23, 1936 (tree 19.5–21 m. flower brown; fruit green); Wareo, *Clemens* 1600 (AA), alt. 600 m., Jan. 8, 1936.

The leaves of the above numbers are obtuse or very shortly acuminate at the apex, less obtuse than acutish at the base, and the anthers are introrse. Otherwise the specimens are a match for the description of Teschner's *E. grandifolia*.

Endiandra Brassii, spec. nov.

Arbor ad 27 m. alta, ramulis glabris striatis atro-rubrescentibus. Folia alternata, elliptica vel oblongo-elliptica, 13–21 cm. longa, 6–10 cm. lata, glabra, subcoriacea, obtusa vel breviter obtuse acuminata, basi acuta vel leviter attenuata, saepe leviter inaequale, supra nitida, penninervia, nervis 8–10 supra subinconspicuis, subtus leviter elevatis, costa atro-rubrescente supra leviter impressa subtus elevata, utrinque conspicue reticulata, petiolis crassis canaliculatis ad 2.2 cm. longis atro-rubrescentibus glabris. Inflorescentia subterminalis, longe paniculata, ad 16 cm. longa, glabrescens, multiflora, pedunculis ad 4.5 cm. longis crassiusculus. Flores $\pm$ 2 mm. longi, flavo-viridescens, pubescentes mox glabrescentes, pedicellis $\pm$ 1 mm. longis glabrescentibus. Fructus fusco-viridescens, glaber inaequilateraliter obovoideus, basi attenuatus, stipitatus, in toto ad 8 cm. longus, (stipe $\pm$ 2 cm. longo) 4 cm. diam., in sicco obscure angulatus.

NETHERLANDS NEW GUINEA: Bernhard Camp, Idenburg River, *Brass & Versteegh 14101* (TYPE, AA), alt. 70 m., frequent tree of secondary forest in the flood plain, April 30, 1939 (tree 19 m. high, diameter 38 cm.; crown not widespreading; bark 8 mm. thick, grey-brown, fissured; wood red-brown; flowers light green; fruits green); same locality, *Brass & Versteegh 13589* (AA), alt. 350 m., occasional tree on a ridge of primary rain-forest, April 19, 1939 (tree 27 m. high, diameter 49 cm.; crown not widespreading; bark 15 mm. thick, grey, scaly, fissured wood red-brown; sterile). BRITISH NEW GUINEA: Palmer River, 2 miles below junction of Black River, *Brass 6921* (AA), alt. 100 m., in riverine forest, June 1936 (small substage tree 8 m. high; leaf nerves brown; small brown flowers in erect solitary panicles); Koitaki, *Carr 12683* (NY), alt. 450 m., forest, June 25, 1935 (tree 36 m. tall; flowers green).

The leaves of this species are very like those of *E. rubescens* (Bl.) Bl. and *E. macrophylla* (Bl.) Boerl. from Malaya, but the inflorescence is longer, more branched and spreading, and the flowers are very small. *Brass 6921* is placed here although the leaves have more pronounced venation and the leaf base is more cuneate than obtuse. Also, the branchlets appear greyish rather than reddish brown. The Carr number is rather doubtfully placed here, but is probably the same. The leaves have a tendency to be smaller, less spreading and the flowers perhaps larger.

In connection with *E. Brassii* the following should be considered: NORTHEASTERN NEW GUINEA: Morobe District, Wareo, *Clemens 1421* (AA), alt. 600 m., Jan. 1936. This is more robust throughout than *E. Brassii*. The leaves are more coriaceous, the petioles thicker, the inflorescence stouter and more pubescent, and the flowers larger, although not approaching the proportions of those of *E. rubescens*. The general coarseness of the branchlets, the leaves, and their reticulation recall *E. praeclara*, also from Malaya. The flowers of the former are, however, smaller and the number of veins less than occur in the latter.

***Endiandra Clemensii*, spec. nov.**

Arbor? ramis griseis rimosis cicatricosis, ramulis brunnescentibus papillo-sis. Folia opposita vel alternata, late lanceolata, 15–18 cm. longa, 4.5–7 cm. lata, glabra, coriacea, leviter obtuse acuminata, basi acuta attenuata, margine undulata, supra nitida, subtus glauca, penninervia, nervis supra planis subtus elevatis pallide flavis, costa subtus papillosa, utrinque conspicue crasseque reticulata, petiolis crassis ad 1.5 cm. longis brunnescentibus glabrescentibus. Inflorescentia axillaris, laxe paniculata, ad 17 cm. longa, pauciflora, pedunculis ad 0.5 cm. longis. Flores $\pm$ 2 mm. longi, glabrescentes, pedicellis ad 2 mm. longis pubescentibus, perianthii lobis punctatis. Fructus ignotus.

NORTHEASTERN NEW GUINEA: Morobe District, Sattelberg, *Clemens 1742* (TYPE, AA), alt. 900 m., Jan. 29, 1936; *Clemens 1848* (AA), alt. 1050 m., Feb. 15, 1936 (tree dbh. 0.30 m.; flower yellow-green).

Ordinarily one would hesitate to describe a new species on such fragmentary material as is represented by this number, but the thickly coriaceous undulate leaves with light yellow venation and strong coarse reticulation set it apart. Also the sparsely flowered, loose, spreading panicles with flattened branchlets, covered with minute papillae, have their share in marking it as new. There is a suggestion of similarity in the general character of the leaves to those of *E. reticulata* Gillespie from Fiji, but the

resemblance ceases there, *E. reticulata* having smaller leaves and inflorescences.

It should be noted here that *Clemens 1848* consists of a sterile shoot with much larger leaves and branchlets that are striate, complanate at the nodes particularly, and with the same papillate condition obtaining on the young parts of the branchlets and the lower surface of the elevated costa of the leaves. An inflorescence, unattached but with the number, corresponds very well with that of the type, even to the oil dots on the corolla lobes.

***Endiandra glandulosa*, spec. nov.**

Arbor 15–22 m. alta, ramulis glabrescentibus mox glabris teretibus striatis rimosis lenticellatis, ultimis glanduloso-papillois atro-rubrescentibus. Folia subopposita vel alternata, elliptica vel lanceolato-elliptica, 5–8(–10) cm. longa, 2–4(–5.5) cm. lata, percoriacea, obtuse acuta vel abrupte obtuse acuminata vel obtusa, basi cuneata, margine revoluta, utrinque glabra, novellis fulvo-pilosis, subtus glauca, fide coll., utrinque supra conspicue subtus obscure glanduloso-papillosa, penninervia, nervis 6–10 utrinque inconspicuis, costa supra impressa, subtus elevata glanduloso-papillosa, petiolis ad 1.5 cm. longis fuscis glanduloso-papillois glabrescentibus mox glabris. Inflorescentia subterminalis, paniculata ad 7 cm. longa, fulvo-pubescent, utrinque glanduloso-papillosa, pedunculis ad 4 cm. longis. Flores 2–3, virides fide coll., 3 mm. longi, extus glabri, intus pubescentes, perianthii lobis glanduloso-punctatis subgibbosis, pedicellis 1.5 mm. longis pubescentibus, bractea lanceolata solitaria suffulti. Infructescentia ad 8 cm. longa, utrinque glabra, glanduloso-papillosa. Fructus rubro-brunnescent fide coll., glaber, glanduloso-papillosus, ellipsoideus, apice basique obtuse leviter angustatus, $\pm 2.5 \times \pm 1.5$ cm., pedicello crasso glabro rubro-brunnescente ± 5 mm. longo.

NETHERLANDS NEW GUINEA: 4 km. sw. of Bernhard Camp, Idenburg River, *Brass 13678* (TYPE, AA), alt. 900 m., common in mossy-forest canopy layer, March 1939 (tree 15 m. high, 0.30 m. diameter; leaves glaucous underneath and the edges recurved; flowers green; fruit unripe); same locality, and alt., *Brass & Versteegh 13144* (AA), frequent tree on a ridge of mossy-forest, Mar. 12, 1939 (tree 22 m. high, diameter 46 cm.; crown not widespreading; bark 17 mm. thick, dark brown, scaly, rough, with a little gum; flowers white; fruits red-brown); 6 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh 12580* (AA), alt. 1200 m., occasional tree on a ridge of primary forest, Feb. 26, 1939 (tree 22 m. high, diameter 47 cm.; crown not widespreading; bark 13 mm. thick, brown, rough, shallowly fissured; wood light brown; fruits green); 15 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh 11968* (AA), alt. 1580 m., frequent tree on a ridge of primary forest, Jan. 23, 1939 (tree 26 m. high, diameter 46 cm.; crown not widespreading; bark 11 mm. thick, black, scaly; wood light brown; flowers white; young fruits green).

The striking feature of this *Endiandra* is the prevalence of glandulose papillae on the ultimate branchlets. The elliptic-lanceolate leaves, greenish brown on drying, also are completely covered with glandular protuberances. The young branchlet tips just past the bud stage are very closely appressed tawny-pubescent, this condition very soon passing. The nearest relatives of this species are found in New Caledonia. *Endiandra Baillonii* Guill. and *E. micrantha* Schlecht. belong in the group, but do not have the profusion of glandular prominences. The last cited specimen was included here only after much consideration. The glandular papillae on the ulti-

mate branchlets and leaves are not as obvious on this specimen, although present in almost as great a number. The leaves are smaller on the whole, not more than 7 cm. in length and 3.3 cm. in width. A large portion of the flowers examined have anthers opening by a single valve instead of the conventional two found in *Endiandra*. It was only by dissecting numerous flowers from the duplicate specimens that typical *Endiandra* stamens were found. Eventually both types were discovered in the same flower. Where the single valve occurs it is semi-lunar or dumbbell-shaped in outline. In other respects the freak flowers are similar to those of the type of *E. glandulosa*.

It is interesting to note that Hooker (Ic. Pl. **16**: t. 1515. 1886) in describing *Syndiclis paradoxa* states "A very remarkable genus, allied to *Endiandra*, the only one of the Order with a 1-celled ovary with a single valve, the emargination of which latter possibly indicates that it and the cell are formed by the confluence of two." *Syndiclis* is very probably an *Endiandra* with freak stamens. If Hooker had had more abundant material at his disposal it is possible that he might have discovered flowers of the normal *Endiandra* type, bearing two-valved anthers. As far as I have been able to ascertain, the type material is the only known material of the genus *Syndiclis*.

Endiandra Ledermannii Teschner in Engl. Bot. Jahrb. **58**: 415. 1923.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7453 (AA), plentiful in rain-forest substage, Aug. 1936 (tree 15–16 m. high; leaves brownish underneath; fruit solitary, lateral or axillary, smooth, purple-brown).

The leaves of the above are on the whole less broad than those of Teschner's type, as he described it, but there can be no doubt that the *Brass* number is a fruiting specimen of *E. Ledermannii*.

Endiandra Merrilliana, spec. nov.

Arbor 12 m. alta, ramulis minute pallide ferrugineo-puberulis striatis. Folia alternata, lanceolata vel anguste elliptica, 4–6.5 cm. longa, 1.5–2.8 cm. lata, supra glabrescentia, subtus minute adpresse pubescentia paullo glauca, coriacea, obtuse vel leviter obtuse acuminata, saepe rotundata, basi cuneata saepe rhomboidea, penninervia, nervis 4–5, nervis et costa supra impressis dense pubescentibus, subtus elevatis pallide ferrugineo-pubescentibus, conspicue et regulariter minute elevato-areolata, petiolis gracilibus, ad 1 cm. longis minute pallide ferrugineo-puberulis. Inflorescentia axillaris, paniculata, ad 4.5 cm. longa, pauciflora, utrinque pallide ferrugineo-pubescentibus, pedunculis brevibus. Flores $\pm$ 2.5 mm. longi, virides, fide coll., 3 staminibus in annulum crassum mutatis, pedicellis ad 2 mm. longis. Fructus purpureo-ater, fide coll., in sicco etiam glaucus, glaber, tuberculatus, ellipsoideus, 1.5×1 cm., calycis reliquiis subtentus, pedicello leviter incrassato pubescente.

BRITISH NEW GUINEA: Western Division, Tarara, Wassi Kussa River, *Brass* 8589 (TYPE, AA), rain-forest substage, Dec. 1936 (tree 12 m., bark rough, lenticellate; leaves grey underneath; flowers green; fruit purple-black).

This species is the third only of the genus recorded from New Guinea to bear an annular ring of tissue in place of the first and second order of

stamens absent in the flower of *Endiandra*. The other two species are *E. flavinervis* and *E. microphylla*, described by Teschner from Northeastern New Guinea. The former is readily distinguishable because of its glabrous branchlets and smaller, completely glabrous leaves with yellow nerves. From the latter it may be separated by the glaucous lower leaf surface displaying prominent nerves clothed with a pale ferrugineous pubescence. This same pubescence is also marked on the inflorescence, as opposed to the fulvo-tomentose condition on that of *E. microphylla*.

The species is named for Dr. E. D. Merrill, Director of the Arnold Arboretum of Harvard University, whose interest in the Papuasian flora is well known.

Endiandra glauca R. Br. Prodr. 402. 1810.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7789 (AA), rain-forest outskirts, Sept. 1936 (substage tree, 6–7 m. high; underside of leaves glaucous; flowers red; fruit $\pm 2 \times 1$ cm., black with a covering of glaucous bloom); same locality and date, *Brass* 7762 (AA), (small tree 3 cm. high, in rain-forest undergrowth; leaves glaucous beneath; flowers pink); Lower Fly River, east bank opposite Sturt Island, *Brass* 8095 (AA), common on dry ridges in rain-forest, Oct. 1936 (weak undergrowth tree [3–5 m.]; leaves glaucous below; fruit hard, black, covered with glaucous bloom); Western Division, Dagwa, Oriomo River, *Brass* 5940 (AA, NY), alt. 40 m., common in creek bank gallery forests, Feb. 16, 1934 (tree 6–7 m., leaves glossy above, very glaucous beneath; flowers red).

The fruit of the specimens from New Guinea are somewhat more slender than those of the Australian species and more tuberculate.

Endiandra sphaerica, spec. nov.

Arbor gracilis ad 15 m. alta, ramulis glabris teretibus striatis griseis, ultimis pubescentibus, plus minusve angulatis brunnescentibus. Folia alternata, lanceolata, 7–14 cm. longa, 2.2–4.5 cm. lata, chartacea, acuminata, basi cuneata, supra glabra, nitida, subtus pilosa vel glabrescentia, glauca, penninervia, nervis 7–8 utrinque subconspicuis, costa supra canaliculata subtus elevata, supra laxe reticulata, petiolis gracilibus canaliculatis 7–12 mm. longis brunnescentibus pubescentibus mox glabris. Inflorescentia ignota. Infructescentia axillaris et terminalis, racemosa, ad 4 cm. longa, glabrescens, pedunculis 1–1.5 cm. longis. Fructus ater et glaucus, fide coll., glaber, globosus, apiculatus, 10–11 mm. diam., calyce persistente horizontaliter patente glabrescente, 6-lobato, pedicellis crassis 4–5 mm. longis.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7512 (TYPE, fruit AA), rain-forest substage, Aug. 1936 (slender tree attaining 15 m.; leaves glaucous below; nerves deeply impressed; fruit black, thickly covered with a glaucous bloom).

The species is near *E. glauca* R. Br. from Australia, but with small globose fruit instead of the oblong fruit of the latter, and with leaves shining on the upper surface.

Endiandra fulva Teschner in Engl. Bot. Jahrb. **58**: 416. 1923.

NORTHEASTERN NEW GUINEA: Morobe District, Yunzaing, *Clemens* 2956 (AA), alt. 1220–1525 m., forest hills, April 25, 1936 (tree, dbh. 15 cm.; flower white, 3-merous). NETHERLANDS NEW GUINEA: 6 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh* 12579 (AA), alt. 1300 m., common tree of primary forest on a ridge, Feb. 25, 1939 (tree 25 m. high, diameter 44 cm., with fairly small crown; bark 9 mm. thick, brown, fairly rough; wood red-brown; fruit green).

Teschner's notes indicate that *E. fulva* has dark brown bark, yellowish or reddish white flowers, and leaves shining green on both sides with yellow nerves. Brass, on the other hand, does not note the leaf characters apparent in the collection Teschner had at his disposal. Clemens mentions the flower as "white." Teschner describes the leaves as minutely areolate, whereas in the two numbers cited above the leaves are minutely reticulate. These, however, are minor differences which do not exclude them from *E. fulva*.

Endiandra impressicosta, spec. nov.

Arbor parva, cortice exfoliato, ramulis glabris griseo-brunneis. Folia alternata, oblongo-lanceolata vel elliptica, (4-)6-10.5(-15) cm. longa, (2-)3.5-5(-6.5) cm. lata, glabra, coriacea, obtuse acuminata, raro acuta vel retusa, basi acuta, saepe inaequali, supra nitida, penninervia, nervis numerosis supra obscuris subtus paullo minus obscuris, costa supra impressissima saepe in sicco subtus elevata fuscior, minute areolata, petiolis crassis ad 1.5 cm. longis atro-rubrescentibus glabris. Inflorescentia axillaris et subterminalis, paniculata, 3-10 cm. longa, multiramosa, multiflora, glabrescens vel minute pallide pubescens, pedunculis ad 2.5 cm. longis, rubrescentibus glabrescentibus. Flores $\pm$ 3 mm. longi, gilvi, fide coll., in sicco perianthii lobis glaucis glabrescentibus, pedicellis ad 1 cm. longis pubescentibus. Fructus purpureo-ater, fide coll., glaber, in sicco rugosus, anguste ellipticus vel ovoideus, asymmetricus, 5×2.4 cm., calyce deciduo pedicello crasso ad 1.2 cm. longo atro-rubrescente.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7619 (TYPE, AA), rain-forest canopy, Aug. 1936 (bark hard, brown, exfoliating in small blocks or scales; flowers cream-coloured); Lower Fly River, east bank opposite Sturt Island, *Brass* 8078 (fruit, AA), small tree of flooded river banks in rain-forest, Oct. 1936 (flowers cream coloured; fruit purple-black, narrow, ovoid, $\pm$ 5 cm. long); same locality *Brass* 8224 (AA), a small canopy tree of the ridges in rain-forest, Oct. 1936 (bark brown, thick, somewhat scaly; leaf margins narrowly recurved; fruit smooth, glaucous, black, $\pm 5 \times 3.5$ cm.).

It is possible that this species belongs to *E. multiflora* Teschner. From the description the following differences manifest themselves. Teschner's species is a tree 20-25 m. high, with grey bark; the leaves may be obovate as well as elliptic and attenuate at the base, never more than 11 cm. long, somewhat shining above with lateral nerves numbering from 8 to 20, often very small and obscure, with the costa white; the petiole is up to 1 cm. long; the flowers are greenish white and the perianth lobes densely pubescent without. Opposing these are the characters of the new species *E. impressinervia*, which is a small canopy tree with hard, brown bark exfoliating in small blocks or scales; the leaves are oblong-lanceolate or elliptic, not attenuate at the base, though frequently unequal, up to 15 cm. long occasionally, shining above, the lateral nerves numbering up to 10, scarcely discernible above, and very faintly so below, with no mention of a white costa by the collector; the petiole is up to 1.5 cm. long; the flowers are cream-coloured and the perianth lobes glabrescent without, and in the dried state definitely glaucous. The latter character would most certainly have been mentioned by Teschner in his description of *E. multiflora* had it been present, for it is one of the striking features of *E. impressicosta*. For

these reasons it has seemed advisable to describe this plant as new. *Brass* 8224 has, on the whole, larger leaves, more conspicuously areolate and less shining on the upper surface.

Endiandra solomonensis, spec. nov.

Arbor ad 20 m. alta, ramulis glabris striatis atro-rubrescentibus. Folia alternata vel opposita, elliptica, 7–12 cm. longa, 3–6.5 cm. lata, glabra, coriacea, obtusa, basi cuneata, saepe inaequali, supra nitida, penninervia, nervis 6–8, utrinque inconspicuis, costa nervisque utrinque conspicuis elevatis, rubrescentibus, utrinque dense crasseque reticulata, petiolis paullo crassis 1–1.3 cm. longis atro-rubrescentibus glabris. Inflorescentia axillaris, subterminalis, brevis, paniculata(?), ad 2 cm. longa, laxa, glabra, pauciflora, pedunculis $\pm$ 5 mm. longis gracilibus. Flores 2 mm. longi, glabri, pedicellis 4 mm. longis gracilibus glabris. Fructus ater, nitidus, fide coll., glaber, anguste ovoideus vel ellipsoideus, 4.2 cm. longus, 2.2 cm. diam., fide coll., calycis decidui reliquiis subtentus, pedicello breviter crasso glabro.

SOLOMON ISLANDS: Bougainville: Koniguru, Buin, *Kajewski* 2109 (TYPE, AA), alt. 900 m., common in rain-forest, Aug. 18, 1930 (very large tree up to 20 meters high; well-advanced flower buds on specimens; fruit immature only one on specimens, oval-shaped with a pointed end; common name: "Cum-cogilu"); same locality, *Kajewski* 1998 (AA), alt. 800 m., common in rain-forest, Aug. 1, 1930 (medium-sized tree up to 20 meters high; fruit shining black when ripe, length 4.2 cm., diameter 2.2 cm.; common name: "Mu-eh").

The short slender glabrous inflorescence and the shining coriaceous leaves, so coarsely and conspicuously reticulate as nearly to obscure the very delicate nervation, at once set this interesting species apart. From the description of *E. fulva* Teschner from Northeastern New Guinea, it appears that *E. solomonensis* may be somewhat related, but it is not a certainty.

Endiandra montana C. T. White in Contr. Arnold Arb. 4: 36. 1933.

NETHERLANDS NEW GUINEA: 4 km. sw. of Bernhard Camp, Idenburg River, *Brass & Versteegh* 13142 (AA), alt. 800 m., common tree of secondary rain-forest in the flat plain, March 11, 1939 (tree 24 m. high, diameter 43 cm., crown fairly small; bark 7 mm. thick, grey, shallowly fissured, with a little gum; wood red-brown; fruits green).

The Australian type is a "small twisted and gnarled tree up to 6 m. high" at 1300 m. altitude, while the New Guinean number is a larger tree at 800 m. altitude. There is no other point of difference except perhaps the smoother surface of the fruit found on the plant from New Guinea.

Endiandra Teschneriana, spec. nov.

Arbor, ramulis glabrescentibus teretibus minute papillosis rubrescentibus. Folia alternata, elliptica, 11(6–14) cm. longa, 4.5(3–6.5) cm. lata, coriacea, obtuse acuminata vel obtusa, basi cuneata, supra glabra, subtus minute pilosa, mox glabrescentia, demum glabra, penninervia, nervis (6–)10–15, utrinque subinconspicuis, supra dense reticulata, petiolis crassis 1–1.5 cm. longis pubescentibus. Inflorescentia axillaris, brevis, racemoso-paniculata, ad 3.5(–6) cm. longa, pubescens, pedunculis ad 4 cm. longis glabris. Flores $\pm$ 6 mm. longi, extus glabrescentes, perianthii lobis 6, carnosus 3 exterioribus quam 3 interioribus majoribus, staminibus 3, conicalibus. Fructus ignotus.

NORTHEASTERN NEW GUINEA: Wälder der Saugueti Etappe, *Schlechter* 18908 (TYPE, AA), alt. 300 m., Dec. 2, 1908.

A rather fragmentary specimen upon which to base a type. It is distinguished by coriaceous reticulate leaves of which the midrib is prominently elevated on both surfaces and the veins are rather obscure throughout. The rather short racemose paniculate inflorescence seems always to be borne in the axils of subterminal leaves.

Endiandra Archboldiana, spec. nov.

Arbor ad 30 m. alta, ramulis glabrescentibus, junioribus pubescentibus, paullo sulcatis minute papillois brunnescentibus. Folia alternata, elliptica vel oblongo-elliptica, 8–15 cm. longa, 4.5–8.5 cm. lata, glabra, coriacea, obtuse acuminata, basi obtusa, saepe acuta, inaequalia, subtus nitida, penninervia, nervis 4–6, supra plus minusve impressis subtus elevatis pallide-rubrescentibus, costa rubescente, utrinque conspicue minute reticulata, petiolicrassissimis canaliculatis ad 1.5 cm. longis rubescentibus glabris, junioribus adpresse fulvo-pubescentibus. Inflorescentia subterminalis, axillaris, paniculata, ad 7 cm. longa, minute adpresse fulvo-pubescentis, pauciflora, floribus in ramulis summis dense aggregatis, pedunculis ad 2 cm. longis rubescentibus. Flores $\pm$ 2 mm. longi, flavi, fide coll., fulvo-pubescentes, pedicellis $\pm$ 2 mm. longis pubescentibus. Fructus ignotus.

BRITISH NEW GUINEA: Central Division, Dieni, Ononge Road, *Brass* 3813 (TYPE, AA, NY), alt. 500 m., common in rain-forests, April 20, 1933 (tree 30 m. or more, with thick, grey, lenticellate bark; wood pale, soft; leaves smooth above, shining beneath; flowers small, yellow; fruit not seen).

Endiandra Archboldiana is distinguished by its minutely reticulate leaves, shining below, and its somewhat short fulvo-pubescent inflorescence with rather few flowers densely clustered at the tips of the floral branchlets. There seems to be no species with which the above may claim close relationship. The petals under great magnification show the presence of oil glands throughout. To date the majority of species described in the family have not given a detailed picture of the floral parts. Hence, it is impossible to indicate any relationship on this basis. With type material available it is possible that this character may in the future assume a taxonomic significance heretofore ignored.

Brassiiodendron, gen. nov.

Arbores. Folia opposita vel alternata, simplicia, papyracea, penninervia. Ramuli graciles, teretes. Inflorescentia axillares vel subterminales, racemosae vel paniculatae, sine involucris. Flores hermaphroditi; perianthii lobi 6, subaequales, carnosii, tubo brevi; stamina 6, exterioribus quam interioribus majoribus introrsis, interioribus extrorsis, series tertia quartaque nullae; antheris 2-loculatis; ovarium irregulariter ovoideum, stigma subsessile, ovulo solitario pendulo oblongo angulato.

TYPE SPECIES: *Brassiiodendron fragrans* Allen.

Brassiiodendron fragrans, spec. nov.

Arbor gracilis ad 20 m. alta, ramulis glabris teretibus striatis olivaceis. Folia opposita vel alternata, plana, fide coll., lanceolato-elliptica, papyracea, acuminata vel obtuse acuminata, raro obtusa vel rotundata, basi cuneata, utrinque glabra, supra olivacea, opaca, subtus nitida, pallida, penninervia, nervis $\pm$ 15 utrinque plus minusve obscuris supra leviter impressis inconspicuis subtus concoloribus leviter elevatis, costa utrinque conspicua

brunnea supra canaliculata subtus elevata, utrinque laxe conspicueque reticulata, petiolis gracilibus 7(–10) mm. longis brunnescentibus glabris. Inflorescentia axillaris et subterminalis, racemosa vel racemoso-paniculata, 2(–3) cm. longa, plerumque 1.5 cm. lata, minute inconspicueque pubescens 2–3-flora, pedunculis ad 1 cm. longis. Flores 6–7 mm. longi, gilvi et fragrantés fide coll., utrinque glabri, corolla ad anthesin patente, perianthii lobis 6, carnosus, margine translucens, glanduloso-punctatis, ad 4 mm. longis, tubo 1 mm. longo, staminibus 6, sessilibus, plus minusve oblongis vel oblongo-lanceolatis utrinque minute glanduloso-papillosis, 3 exterioribus introrsis, 2.5 mm. longis, 3 interioribus extrorsis, saepe ut videtur plus minusve cum petalis perpendicularibus, $\pm$ 1.5 mm. longis, ovarium irregulariter ovoideum, stigma subsessile. Inflorescentia ♀ et fructus ignoti.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7465 (TYPE ♂, AA), rain-forest subcanopy, Aug. 1936 (rather slender tree 20 m. tall; bark brown, lenticellate, slightly fissured; leaves flat, glossy below; flowers cream coloured, fragrant).

The genus is close to *Endiandra*, but differs in having six perfect stamens instead of three, the three interior being definitely smaller. There is an absence of the third series of stamens as well as staminodia and there is no appearance of glands. The species is distinguished by coarsely and prominently reticulate papery leaves, glossy below, with nervation inconspicuous above and slightly more so below. The short, few-flowered usually racemose, occasionally racemose-paniculate inflorescences without bracts, and the fragrant flowers with fleshy perianth lobes which are thinner and somewhat transparent at the margin are presumably specific characters.

The genus is named in honor of Mr. L. J. Brass, the botanical collector of the Archbold Expeditions into New Guinea.

Cassytha Linnaeus

Cassytha filiformis Linnaeus, Sp. Pl. **1**: 35. 1753; Nees, Syst. Laurin. 642. 1836; Meissner in DC. Prodr. **15**¹: 255. 1864; K. Schum. Notizbl. Berl. **1**: 49. 1895; Warburg in Engl. Bot. Jahrb. **13**: 315. 1895; K. Schum. Notizbl. Berl. **2**: 117. 1898; K. Schum. & Lauterb. Fl. Deutsch. Schutz. Südsee 334. 1901; Val. Bull. Dept. Agr. Ind. Neerl. **10**: 13. 1907; Reching. Denkschr. Math. Nat. Kl. Ak. Wiss. Wien. **85**: 283, f. 12. (Reprint Bot. Zool. Ergeb. Samoa. **3**: 109) 1910; C. T. White in Proc. Roy. Soc. Qld. **35**: 31. 1922; Schmidt in C. T. White, Jour. Arnold Arb. **10**: 216. 1929.

Cassytha filiformis L. var. β *subpubescens* Meissner in DC. Prodr. **15**¹: 255. 1864.

Cassytha filiformis L. var. *pubescens* K. Schum. & Holtr. Fl. K. W. Land 43. 1889.

BRITISH NEW GUINEA: Middle Fly River, Lake Daviumbu, *Brass* 7802 (AA), parasite on underbrush of forest borders, Sept. 1936; coast between Oriomo and Fly Rivers, *Brass* 6417 (AA), parasitic in large quantities on low vegetation along beaches, March 31, 1936; Western Division, Tarara, Wassi Kussa River, *Brass* 8639 (AA), grass parasite in savannah-forests; abundant on wet flats, Jan. 1937; Wuroi Oriomo River, *Brass* 5795 (AA, NY), alt. 10–30 m., on small trees of savannah-forest patches Jan.–March, 1934 (stems smooth green); Gulf Division, Maclatchie Point, *Brass* 1180 (AA), on beach trees, March 19, 1926; Eastern Division, Bomgwina, *Brass* 1615 (AA), on *Ipomoea pes-caprae*, June 1, 1926. NETHERLANDS NEW GUINEA: Hollandia, *Brass* 8886 (AA), alt. 20–100 m., abundant on small trees and shrubs of secondary savannahs, June 29, 1938.

SOLOMON ISLANDS: San Cristobal: Star Harbour, *Brass* 3069 (AA), very plentiful in loose coral sand near the sea, Oct. 18, 1932 (trailing over sand or climbing and twining on low beach vegetation).

The following numbers from British New Guinea, *Brass* 5795, 8639 and from Netherlands New Guinea, *Brass* 8886, probably belong with the widespread *C. filiformis*, though they vary in slight detail such as outline of calyx-lobes and bracteoles. Since the age of the plant causes pubescence to vary, the variety β *subpubescens* has become a part of the species.

***Cassytha Archboldiana*, spec. nov.**

Parasitica aphylla, caulibus sat gracilibus, 5 mm. crassis, ramosis, glabris vel glabrescentibus, ramulis junioribus dense fulvo-tomentellis. Inflorescentia solitaria vel gemina, paniculata, pedunculata, ad 7-flora, paniculis ad 2 cm. longis, pedunculis erectis ramosis, pubescentibus, paniculis et ramulis pubescentibus, bracteis 3, ad 1 cm. longis acutis, pubescentibus subtentibus, floribus 2–6, 2 mm. longis sessilibus, 1–2 mm. distantibus paniculae apice bracteolis 3 triangularibus acutis ciliolatis pubescentibus subcarinatis, 0.7 mm. longis, perianthii lobis exterioribus 3, ovatis ciliolatis, subcarinatis, 0.5 mm. longis, interioribus 3, ovalibus acutis glabris subcarinatis, margine minute papillois, staminibus 9, 6 exterioribus 1.5 mm. longis, bilocularibus, introrsis, 3 interioribus 1 mm. longis, abortivis, cum exterioribus alternatis, 3 staminodiis anguste ovatis, biglandulosis; ovario ellipsoideo, stylo gracile. Fructus subglobosus 5 mm. longus, 4 mm. latus, glaber, bracteolis persistentibus subtentus, perianthii lobis plus minusve erectis persistentibus coronatus.

NETHERLANDS NEW GUINEA: Balim River, *Brass* 11675 (TYPE, AA), alt. 1600 m., common on grass and shrubs, Dec. 1938.

The species differs from the widespread *C. filiformis* L. and the Australian *C. paniculata* in having branched inflorescences which are 2 cm. or less in length. The tawny-pubescent young shoots are also distinctive.

***Cassytha tenuis*, spec. nov.**

Parasitica aphylla, caulibus tenuibus, minusquam 0.3 mm. crassis, glabris obsolete striatis. Inflorescentia solitaria, spicata, pedunculata, pauciflora (1–3), spicis 10–12 mm. longis, pedunculis erectis filamentosis, cano-pubescentibus, bracteis 3 minutis, acutis, ciliolatis, subtentibus, floribus 1–3, 1–1.5 mm. longis, sessilibus, 0.5–1.5 mm. distantibus in tantum aggregatis apice spicae, bracteolis 3 ovatis acutis ciliolatis, 1 mm. longis, perianthii lobis exterioribus 3, ovatis glabris, 1.5 mm. longis, margine minute papillois, staminibus 9, 0.5 mm. longis, antheris bilocularibus, 6 exterioribus introrsis 3 interioribus alternatis 3 staminodiis rotundatis, biglandulosis; ovario ellipsoideo, stylo gracile. Fructus subglobosus, 3.5 mm. longus, 3 mm. latus sparse cano-pubescentibus, bracteolis persistentibus subtentus, perianthii lobis plus minusve erectis persistentibus coronatus.

BRITISH NEW GUINEA: Western Division, Mabaduan, *Brass* 6514 (TYPE, AA), parasitic on grass in savannah-forests and forming tangles close to the ground, April 1936.

Cassytha tenuis resembles *C. capillaris* L. from Malaya vegetatively, but the branches are even more slender and the inflorescence is pedunculate rather than sessile as in the former species. The dense whitish pubescence on the peduncles of the inflorescence and the sparse whitish pubescence of the mature fruit of the Papuan species are also outstanding.